

GENERAL NOTES

GENERAL

Dimensions refer to rough concrete surfaces, face of studs, face of concrete block, top of sheathing, or top of slab, unless otherwise indicated. The Contractor shall verify all dimensions prior to the start of construction. The Architect shall be notified of any discrepancies or inconsistencies.

All drawings are considered to be a part of the contract documents. The Contractor shall be responsible for the review and coordination of all drawings and specifications prior to the start of construction. Any discrepancies that occur shall be brought to the attention of the Architect prior to the start of construction so that a clarification can be issued. Any work performed in conflict with the contract documents or any code requirements shall be corrected by the Contractor at his own expense and at no expense to the owner or Architect.

Notes and details on the structural drawings shall take precedence over general notes and typical details. Where no details are given, construction shall be as shown for similar work.

All work shall conform to the minimum standards of the following codes:

2001 California Building Code, which comprises Title 24, Part 2 of the California Code of Regulations, as adopted by the California Building Standards Commission referred to here as "the California Building Code, 2001 Edition" or "the code", and any other regulating agencies which have authority over any portion of the work, including the State of California Division of Industrial Safety, and those additional codes and standards listed in these structural notes and specifications.

ASTM specifications on the structural drawings shall be of the latest revision.

Refer to the architectural drawings for the following:

Dimensions not shown on the structural drawings.
Size and location of all floor and roof openings, except as noted.
Size and location of all interior and exterior non-bearing partitions.
Size and location of all door and window openings, except as noted.
Size and location of inserts for cladding or ornamentation.
Size and location of all concrete curbs, equipment pads, pits, floor drains, slopes, depressed areas, change in level, chamfers, grooves, inserts, etc.
Floor and roof finishes.

Refer to the mechanical, plumbing, and electrical drawings for the following:

Pipe runs, sleeves, hangers, trenches, wall and slab openings, etc., except as noted.
Electrical conduit runs, boxes, and outlets in walls and slabs.
Concrete inserts for electrical, mechanical, or plumbing fixtures.
Size and location of machine or equipment bases or anchor bolts for motor mounts.

The contract structural drawings and specifications represent the finished structure. They do not indicate the method of construction. The Contractor shall provide all measures necessary to protect the structure during construction. Such measures shall include, but not be limited to, bracing and shoring for loads due to construction equipment, etc. Observation visits to the site by the Engineer shall not include inspection of the aforementioned items.

Contractor shall investigate the site, during clearing and earthwork operations, for filled excavations or buried structures, such as cesspools, cisterns, foundations, etc. If any such structures are found, the Engineer shall be notified immediately.

Openings, pockets, etc., larger than 6" shall not be placed in concrete slabs, decks, or walls, unless specifically detailed on the structure drawings. Notify the Engineer when drawings by others show openings, pockets, etc., larger than 6" not shown on the structural drawings, but which are located in structural members. For any further restrictions on openings in structural elements, see applicable sections below.

Construction material shall be spread out if placed on framed roof or floor. Load shall not exceed the design live load per square foot. Provide adequate shoring and/or bracing where the structure has not attained the design strength.

Specifications and detailing of all waterproofing and drainage items, although sometimes indicated on the structural drawings for general information purposes only, are solely the design responsibility of others.

Shop drawings, special inspections, and material sampling and testing, when required, are specified in their respective tables in the general notes and in the specifications.

DESIGN

Design conforms to the California Building Code, 2001 Edition.

Live loads: Roof (flat) 20 psf
Roof (sloped) 16 psf

Wind Analysis: Basic wind speed 70 mph
Exposure B

Seismic Analysis: Static lateral force procedure
Seismic Zone Factor: (Table 16-I) $Z = 0.4$
Soil Profile Type: (Table 16-J) $S = Sd$
Occupancy Category: (Table 16-K) $I = 1.25$
Numerical Coefficient: (Table 16-N) $R = 2.0$
Amplification Factor: (Table 16-N) $Q_0 = 2.8$
Seismic Coefficients: (Table 16-O) $C_u = 0.44$
(Table 16-O) $C_v = 0.74$
Near-Source Factors: (Table 16-S) $N_0 = 1.0$
(Table 16-S) $N_1 = 1.0$
Seismic Source Type: (Table 16-U) $A = A$

FOUNDATIONS

Foundations conform to the recommendations of the Geotechnical Report entitled: "Soil Engineering Study and Liquefaction Analysis, New Mountain View Senior Center, Project 04-28a, 286 Escuela Avenue, Mountain View, California," prepared by Earth System Consultants Northern California, dated May 2004.

Maximum soil pressure = 2000 psf DL + LL + Lateral
= 2867 psf DL + LL + Lateral

Equivalent fluid pressure = 50 pcf: unrestrained walls

Passive earth pressure = 250 pcf

Coefficient of friction = 0.3

Refer to the Geotechnical Report for additional recommendations not listed below. All site grading, excavations, fills, and soil preparation shall conform to the Geotechnical Report and all work shall be done under the observation of the Geotechnical Engineer.

The Contractor shall provide for the design and installation of all cribbing, sheathing, and shoring required and shall be solely responsible for all excavation procedures including lagging, shoring, and the protection of adjacent property, structures, streets, and utilities in accordance with all national, state, and local safety ordinances.

Footings

Footings shall extend to such depth as to bear upon firm, undisturbed native soil or engineered fill. All abandoned footings, utilities, etc. shall be removed. All footings shall be founded at a depth at least 18" below the lowest adjacent grade. Footing depths shown on the structural drawings are minimum depths. Footings may be poured in neat excavated trenches.

Excavations for footings shall be observed by the Geotechnical Engineer prior to placing reinforcing and concrete. The Contractor shall notify the Geotechnical Engineer when the excavations are ready for observation.

Engineered Fill

Engineered fill below footings shall be compacted to 95% relative compaction as determined by the ASTM D1557 compaction test method and under the observation of the Geotechnical Engineer. Engineered fill shall have a minimum depth of 3'-0" beneath all footings and extend at least 5'-0" beyond all edges thereof.

Slabs On Grade

For the sub capillary break materials under concrete slabs on grade, refer to the Geotechnical Report. Provide a 15 mil vapor barrier complying with ASTM E 1665-97 Class A with a MVR less than or equal to 0.008 per ASTM E96, placed in accordance with ASTM E 1645-96 over 4" rock course under slab on grade. Rock course shall be rolled to a smooth surface.

Backfill

All excavations shall be properly backfilled. Do not place backfill behind retaining walls before the concrete or grout has attained full design strength. The Contractor shall brace or protect all building and pit walls below grade from lateral loads until the attaching floors are completely in place and have attained full strength. The Contractor shall provide for the design, permits, and installation of such bracing.

Footings backfill and utility trench backfill within the building area shall be mechanically compacted in layers in accordance with the Geotechnical Report and observed by the Geotechnical Engineer or Inspector. Flooding will not be permitted.

Geotechnical Engineer Observation Letter

The Geotechnical Engineer shall prepare a letter for the building department giving an opinion regarding the performance of the footing excavations, engineered fill compaction, subgrade preparation, and backfilling with the requirements contained in the Geotechnical Report.

REINFORCING STEEL

Reinforcing Steel detailing, fabrication, and placement shall conform to the "Uniform Building Code," Chapter 19; the "Manual of Standard Practice of the Western Concrete Reinforcing Steel Institute," latest edition; and the "Building Code Requirements for Structural Concrete and Commentary," ACI 318-95; unless otherwise noted.

Standards: Reinforcing steel shall conform to the following standards:

Deformed Bars, #3 ASTM A615, Grade 40
Deformed Bars, #4 and larger ASTM A615, Grade 60
Welded reinforcement, when specified by Engineer ASTM A706

Placing: All steel reinforcement shall be securely tied in place so as to maintain their exact position before and during the placement of concrete. Reinforcing steel shall be securely tied in place with #16 annealed iron wire. Bars in beams and slabs shall be supported on wall-cured concrete blocks or approved plastic tipped metal chairs, as specified by CSI Manual of Standard Practice, 96-1. Wire fabric in slabs shall be securely fastened to supporting devices to maintain their position during concrete placement.

Lap bars 48 diameters, 24" minimum, unless otherwise noted.

Lap wire fabric 6" minimum.

Mechanical splices: Where noted on plans, provide threaded couplers capable of developing 100% of the specified yield strength of the reinforcing steel. Couplers shall be Type 2, as per UBC Section 1921.2.6.1.2. Threaded Couplers shall be as manufactured by Erico Company, or approved equal with a current ISO approval report.

Welding: Where welding of reinforcing bars is approved by the Engineer, it shall be done by AWS certified welders using E60XX or approved electrodes. Welding procedures shall conform to the requirements of the "Structural Welding Code - Reinforcing Steel", AWS-D1.4, latest edition.

Clear distances, steel to forms, unless noted otherwise:

Slabs not exposed to weather, joists, interior wall surfaces 3/4"
Exterior wall surfaces, slabs exposed to weather 1-1/2"
Clear distance between bars 2"
Slabs on rolled grade 1-1/2"
Formed surfaces in contact with earth 3"
Unformed surfaces in contact with earth 3"

Shop drawings shall be submitted to the Architect for review prior to fabrication. Shop drawings shall include elevations of all beams and columns showing bar and lap locations. See the Architect's Specifications and General Notes. Submit all certificates for reinforcing steel prior to rebar placement.

CONCRETE WORK

Forms shall be properly constructed conforming to concrete surfaces as shown on the drawings, sufficiently tight to prevent leakage, sufficiently strong, and braced to maintain their shape and alignment until no longer needed to support the concrete. Forms for exposed concrete shall be plywood, using sheaths as large as possible, with all joints tightly fitted and blocked, and shall produce a finished surface which is smooth, true, and free from blemishes according to accepted standards for architectural concrete.

Refer to architectural, electrical, and mechanical drawings for details at door and window openings, floor type hinges, etc., and for location of sleeves, pipes, and other embedded items. Openings through slabs or walls not shown on the structural drawings which would interrupt reinforcing bars shall not be made without approval of the Architect.

Debris should be entirely removed from forms prior to concrete placement.

Horizontal construction joints shall be located as shown on the structural drawings, and the hardened concrete surface shall be cleaned by sand-blasting or other approved means to expose firmly embedded aggregates prior to pouring additional concrete in contact with these surfaces. Vertical construction joints through beams or slabs shall be located only as shown on structural drawings.

Forms and shoring shall not be removed until the concrete has attained sufficient strength to withstand all loads to be imposed without excessive stress, creep, or deflection. See specifications for shoring requirements.

Concrete shall be ready mixed conforming to ASTM C94. Cement shall be Portland Cement Type II, conforming to ASTM C150. All hardrock (H.R.) concrete used in suspended slabs and slabs on grade shall be designed for low shrinkage (L.S.). Acceptable coarse aggregates for low shrinkage concrete include Kaiser Clayton, Granite Rock, or Limestone. Fine aggregates acceptable for low shrinkage concrete include Angel Island sands. Alternative aggregates may be submitted provided they provide a concrete mix with a shrinkage limitation of 0.04% after 28 days of drying. Submit test data to Architect for review.

Use maximum size aggregate as noted below. Use 3/8" maximum aggregate where necessary for proper placing, such as in thin or congested sections, etc. Superplasticizers may be used to improve workability in thin or congested sections. Incorporate superplasticizers into concrete mix designs.

Contractor shall submit for review of the Architect the concrete mixes proposed for use, designed by the concrete supplier and reviewed by an approved testing laboratory.

Concrete shall have the following characteristics:

Concrete Location	Strength Aggregate	Maximum # 28 Days Slump	Minimum Content	Maximum Water/Cement Ratio
Footings	1-1/2" H.R.	3000 psi ... 3-1/2"	5 Sacks	0.60
Slab on grade	3/4" H.R.-L.S.	3000 psi ... 3-1/2"	5 Sacks	0.45

• Slump shall be the minimum consistent with proper placing.

Pipes other than electrical conduits shall not be embedded in structural concrete except where specifically approved by the Engineer. Electrical conduits embedded in concrete shall not exceed 1/4" O.D., without approval of the Engineer.

Conduit or sleeves, when embedded in concrete, shall be spaced with one conduit or sleeve diameter (larger conduit/sleeve) clear between adjacent conduits, sleeves, or rebar, or 1 inch, whichever is greater. Conduit or sleeves can be tied to rebar when oriented perpendicular to them, provided the location of the rebar is not affected by the conduit or sleeves. Conduit or sleeves without clearance noted above shall be submitted to the architect for review prior to installation. Added trim reinforcement will be required where clearances cannot be met, such as electric panel rooms.

The Contractor shall inform the Architect at least 3 days prior to pouring any structural concrete so that the Architect may have the opportunity of reviewing the work prior to concrete placement.

All concrete except slabs on grade 6" thick or less shall be mechanically vibrated so as to completely fill the forms without causing undue segregation.

Four test cylinders from each 150 yards, or fraction thereof, poured in any one day, shall be secured and tested by an independent testing agency; one to be tested 7 days, two at 28 days, and the fourth held in reserve. For post-tensioned concrete secure five cylinders per 150 yards, or fraction thereof, poured in any one day, two sets minimum. Test one at 4 days, two at 28 days, and hold two in reserve.

The Contractor shall remove and replace any concrete which fails to attain specified strength in 28 days if so directed by the Architect. Any defects in the hardened concrete shall be satisfactorily repaired or the hardened concrete shall be replaced.

MASONRY

Specifications:

Concrete Block: ASTM C90, Grade N Type I Units made with medium weight aggregates, which shall provide a full assembly strength according to specs.
Reinforcing: ASTM A615, Grade 60
Grout: 2000 psi minimum at 28 days
Mortar: Type S or 2000 psi minimum at 28 days

Use all double open end bond beam units, except closed end at corners, openings, and ends of walls. Provide a minimum of 1/2" clear between the main reinforcing and the masonry units. Lap all splices 40 diameters or 2'-0" minimum. Place extra #4 bar at top of walls, at all ends and corners, and around all sides of openings, unless noted otherwise, and extend 40 diameters (2'-0" minimum) beyond the edges of the openings. When height of grout pour exceeds 4'-0", provide cleanouts at the bottom of the wall at all cells containing vertical reinforcing. All grout shall be mechanically vibrated by electric vibrators. Fill all cells solid with grout.

Refer to the testing requirements under the "Special Inspection" section.

STRUCTURAL STEEL AND MISCELLANEOUS IRON

Structural Steel and Miscellaneous Iron shall be fabricated and erected according to the American Institute of Steel Construction's "Specifications for Design, Fabrication, and Erection of Structural Steel for Buildings," latest edition and the "Code for Standard Practice for Steel Buildings and Bridges," latest edition.

All steel wide flange shapes shall conform to ASTM A572 (Fy = 50 ksi). Unless otherwise noted, all other steel plates and shapes shall conform to ASTM A36. Steel Pipe shall conform to ASTM A53 Grade B (Fy = 35 ksi) or ASTM A501 (Fy = 38 ksi). Structural Tubing shall conform to ASTM A500 Grade B. Use bars in lieu of plates wherever practical or called for on the structural drawings.

All steel to steel bolted connections shall be bolted with high strength bolts according to the AISC Manual of Steel Construction, Part 9, 10th Edition. Bolted connections shall be bolted with unfinished bolts according to ASTM A307. Anchor bolts shall conform to ASTM F1554 GR 36.

All welded connections shall be welded according to the "Structural Welding Code - Steel", AWS-D1.1, latest edition. Welding shall be performed by welders certified for the welds to be made. All welding should be done with E70XX electrodes, unless noted otherwise. Refer to the specifications for the welding process to be used.

The weld lengths called for on the structural drawings are the net effective length required. Where fillet weld symbol is given without indication of size, use the minimum size weld as specified in AWS Manual of Steel Construction 9th Edition, Section 1.17.2. All structural steel surfaces that are encased in concrete, masonry, or spray on fireproofing, or are encased by building finish, shall be left unpaired.

Galvanize according to ASTM A123, hot dip process.

Additional miscellaneous metal items such as embeds, railings, and supports for interior finishes may be shown on drawings prepared by others, see architectural drawings.

Shop drawings shall be submitted to the Architect for review prior to fabrication.

The testing agency shall send copies of all structural testing and inspection reports directly to the Engineer.

LIGHT METAL STRUCTURAL FRAMING

Light metal structural framing shall be fabricated and erected according to manufacturer's recommendations. All structural properties shall be computed in accordance with the AISI "Specifications for the Design of Cold Formed Steel Structural Members," latest edition.

Unless otherwise noted, steel shall conform to the following specifications:

- Studs, runners, and joists, painted, 18 gage and heavier: ASTM A1011 Grade 50, modified to a minimum yield point of 50 ksi.
- Studs, runners, and joists, galvanized, 16 gage and heavier: ASTM A653 Grade 50, minimum 50 ksi yield.
- Studs, runners, and joists, painted, 18 gage and lighter: ASTM A1008 Grade 33, modified to a minimum yield point of 33 ksi.
- Studs, runners, and joists, galvanized, 18 gage and lighter: ASTM A653 Grade 33, minimum 33 ksi yield.

For minimum stud section properties, refer to the structural details.

Metal stud and metal joist bridging (or solid) shall be provided and installed according to the manufacturer's recommendations. Align at least one metal stud under every metal joist, beam, or header.

Welding of light metal shall be with fillet welds equal in thickness to the thinner of the two sections being joined. All welded connections shall be welded as shown on the structural drawings. Double vertical studs shall be stitch welded together on both flanges with 1/8" groove welds x 1" long at 12" on center.

Shop drawings shall be submitted to the Architect for review prior to erection.

The Testing Laboratory shall send copies of all testing reports directly to the appropriate Building Inspection Department.

CARPENTRY

Framing lumber shall meet the following minimum standard except where otherwise noted:

USE	SPECIES	GRADE	AUTHORITY
Plywood	A.P.A.	CC Ext. or Grade Marked	UBC Standards CD Int. w/ Exterior Glue Sec. 23-2

Horizontal roof framing lumber:

	D.F.	No. 2	WCLB & WMPA
4 x 4 and smaller	D.F. <td>No. 2</td> <td>WCLB & WMPA</td>	No. 2	WCLB & WMPA
2 x roof joists and rafters	D.F. <td>No. 2</td> <td>WCLB & WMPA</td>	No. 2	WCLB & WMPA
2 x floor joists	D.F. <td>No. 2</td> <td>WCLB & WMPA</td>	No. 2	WCLB & WMPA
4 x headers and beams	D.F. <td>No. 2</td> <td>WCLB & WMPA</td>	No. 2	WCLB & WMPA
6 x 6 and larger	D.F. <td>No. 1</td> <td>WCLB & WMPA</td>	No. 1	WCLB & WMPA

	D.F.	Standard & Better	WCLB & WMPA
All other framing	D.F. <td>Standard & Better</td> <td>WCLB & WMPA</td>	Standard & Better	WCLB & WMPA
Lumber, u.n.o.			

Minimum framing nailing shall conform to UBC Table 23-II-B-1. All nails shall be common wire nails. Predrill nail holes to 70% of nail shank diameter where nailing tends to split wood.

Approved metal type bridging shall be used only for roofs.

Joist hangers and other metal framing accessories are referred to on plans by particular type as manufactured by Simpson Company, San Leandro, California. Accessories of other manufacture with equivalent load carrying characteristics may be used.

Fire stopping, backing for interior finishes, nonbearing walls, and other non-structural framing are not necessarily shown on structural drawings.

Plywood or Oriented Strand Board (OSB) Sheathing:

Roof sheathing shall be 1/2" Ident Index 32/16 Plywood only.

Wall sheathing shall be 1/2" Ident Index 16/0 Plywood or OSB.

Shear Wall Sheathing shall be Ident Index 16/0 Plywood Struct 1

Sheathing Installation - Plywood or OSB roof and floor sheathing shall be laid with the grain of the outer plies perpendicular to the framing members and end joints shall be staggered. Wall sheathing shall be applied vertically.

Unless otherwise noted, plywood or OSB sheathing nails shall be common. Equivalent pneumatic driven nails or staples may be used if fastener manufacturer has received ICBO approval according to Research Recommendations Report ER-2843. Equivalent pneumatic driven nails or staples may be used if fastener manufacturer has received ICBO approval according to Research Recommendations Report #2403 and the approval of City and County Building Department.


Use of machine nailing is subject to a satisfactory jobsite demonstration for each project and the approval by the project architect or structural engineer and the office of the state architect. The approval is subject to continued satisfactory performance. Machine nailing will not be approved in 5/16" plywood or OSB sheathing. If nailheads penetrate the outer ply more than would be normal for a hand hammer or if minimum allowable edge distances are not maintained, the performance will be deemed unsatisfactory.

Roof Sheathing
Block all unsupported edges of sheathing where shown on plans. Edge blocking shall be 1-1/8" plywood or OSB minimum.

Typical nailing shall be 10d at 6" o.c. at all supported edges and over shear walls, and 10d at 12" o.c. at all intermediate supports, unless otherwise noted, see plans.

Wall Sheathing - Block all unsupported edges of sheathing. Walls to be sheathed with plywood or OSB are designated thus ----- on plans.

Typical nailing at wood stud walls shall be 8d at 6" o.c. at all edges, and 8d at 12" o.c. at all intermediate supports, unless otherwise noted, see plans. Typical fastening at light gage metal stud walls shall be No. 8 by 1" flat head screws with a minimum head diameter of 0.292" at 6" o.c. at all edges, and at 12" o.c. at all intermediate supports, unless otherwise noted, see plans.

Plywood sheathed walls, denoted with a  symbol, are designated as shear walls and shall be nailed as per the Shear Wall Nailing Schedule on 2/51.3.

GLUED LAMINATED BEAMS

Glued laminated members shall be manufactured according to the AITC 117 "The Standard Specifications for Structural Glued Laminated Douglas Fir Timber," latest edition. The glue shall be of wet condition of service and an AITC Certificate of Inspection is required.

Glued laminated beams shall provide stress values that meet or exceed the following:

Bending Fb (Bottom Fibers)	2400 psi
Bending Fb (Top Fibers) - Single Span	1200 psi
Bending Fb (Top Fibers) - Multiple Spans or Cantilevers	2400 psi
Horizontal Shear Fv	165 psi
(For 3 1/8" Glulams ONLY, Horizontal Shear Fv may be	95 psi)
Modulus of Elasticity	1800 ksi
Compression Perpendicular to Grain	450 psi

Provide cambers as noted on the drawings.

Appearance Grade Shall Be: Industrial, when concealed from view.
Architectural, when exposed to view.

WOOD 'I' JOISTS (TJI)

Wood 'I' joists (TJI) shall be as manufactured by Trus Joist MacMillan. Joists shall be fabricated using structural grade plywood or oriented strand board for web material. WOODLUM lumber or stress-rated lumber for flange material, and utilizing waterproof glues. Design shall be in accordance with applicable ICBO Research Recommendations.

Double roof joists at all hanging mechanical units. See plans for locations. Nail doubled joists with 16d at 12" o.c., staggered.

Provide the following blocking as a minimum, unless shown otherwise:
2" x full depth solid blocking between joists over support.
2" x full depth solid blocking between joists over and below partition walls.

Provide full depth TJI blocking for the following conditions, unless shown otherwise:
Between joists over support.
Between joists over partition walls.

Bridging shall be full depth TJI blocking, installed as follows:
Roof joists: 12'-0" o.c. maximum, not more than 12'-0" from support.

Shop drawings, showing critical dimensions for placement and design loads, shall be submitted to the Architect for review and approval prior to fabrication. Shop drawings and calculations shall be signed by a Civil or Structural Engineer licensed in the state of California.

Joists stored prior to erection shall be stored in a vertical position and protected from the weather. Handle joists with care to avoid damage. Erection bracing shall be provided to keep the joists straight and plumb and to assure adequate lateral support for the joists until the sheathing has been attached. After installation and prior to enclosing the joists, the Contractor shall provide the Architect with an opportunity to observe the work.

SHOP DRAWING SUBMITTALS

When indicated with a '✓', the following items shall have either a) shop drawings or b) certificates of conformance or c) shop drawings, calculations, and details submitted to the architect for review and approval prior to fabrication. When shop drawings, calculations, and details are required, submittals (drawings and calculations) must be signed and stamped by a Civil or Structural Engineer registered in the State of California. For information on the content of the submittals, refer to the project specifications and the specific general notes sections. The Engineer will review two prints and one reproducible copy of each submittal.

Item	Shop Drawings	Certification	Details	Remarks
Concrete, reinforcing	✓			
Concrete, mixes		✓		
Concrete, cement		✓		
Concrete, fine aggregates		✓		
Concrete, coarse aggregates		✓		
Concrete, admixtures		✓		
Structural steel	✓			
Glued-laminated beams	✓			AITC Certificate
Wood 'I' joists	✓			
Metal stud framing, exterior walls	✓			

SPECIAL INSPECTION

When indicated with a '✓', the following items shall be inspected in accordance with UBC Section 1701.5 by a certified special inspector from an established testing agency. All inspection shall be continuous, unless otherwise noted. For material sampling and testing requirements, refer to the material sampling and testing section, the project specifications, and the specific general notes sections. The testing agency shall send copies of all structural testing and inspection reports directly to the Architect, Engineer, and Building Department. Any materials which fail to meet the project specifications shall immediately be brought to the attention of the Architect.

Item	Required	Remarks
Grading, excavations, and fill	✓	By Geotechnical Engineer
Concrete, rebar placement	✓	Inspect final placement
Concrete, anchor bolts and inserts	✓	
Concrete, concrete placement	✓	Continuous
Expansion anchor placement		
Structural steel, shop welding - periodic	✓	Fillet welds
Structural steel, shop welding - continuous	✓	Partial or full penetration welds
Structural steel, field welding - periodic	✓	Fillet welds
Structural steel, field welding - continuous	✓	Partial or full penetration welds
Structural steel, high strength bolting	✓	
Roof sheathing nailing		Periodic
Shear wall sheathing nailing		Periodic
Glued-laminated beams		
Anchor bolt/hold-down/Metal strap placement	✓	

MATERIAL SAMPLING AND TESTING

When indicated with a '✓', the following materials shall be sampled and/or tested by a certified inspector from an established testing agency in accordance with the project specifications, general notes, or prevailing building code, whichever is more stringent. All material sampling and testing shall be performed in accordance with ASTM requirements. For additional information on material sampling and testing, refer to the project specifications and the specific general notes sections. The testing agency shall send copies of all structural testing reports directly to the Architect, Engineer, and Building Department. Any materials which fail to meet the project specifications shall immediately be brought to the attention of the Architect.

Item	Required	Remarks
Concrete, reinforcing	✓	Mill certificate in lieu of samples
Concrete, cylinders	✓	
Expansion anchor installation	✓	
Epoxy anchor installation	✓	

STANDARD HOOK DETAILS

Detailing Dimension Hook

180° HOOK

90° HOOK

D = Finished Inside Bend Diameter

Bar Sizes	A or G	J	D	A or G	D
#3	5"	3"	2 1/4"	6"	2 1/4"
#4	6"	4"	3"	8"	3"
#5	7"	5"	3 3/4"	10"	3 3/4"
#6	8"	6"	4 1/2"	11"-0"	4 1/2"
#7	10"	7"	5 1/2"	11"-2"	5 1/2"
#8	11"	8"	6"	11"-4"	6"
#9	11"-3"	11 1/2"	9 1/2"	11"-7"	9 1/2"
#10	11"-5"	11"-1 1/2"	10 1/2"	11"-10"	10 1/2"
#11	11"-7"	11"-2 3/4"	12"	2'-0"	12"
#14	2'-3"	1'-9 1/4"	18 1/4"	2'-7"	18 1/4"
#18	3'-0"	2'-4 1/2"	24"	3'-5"	24"

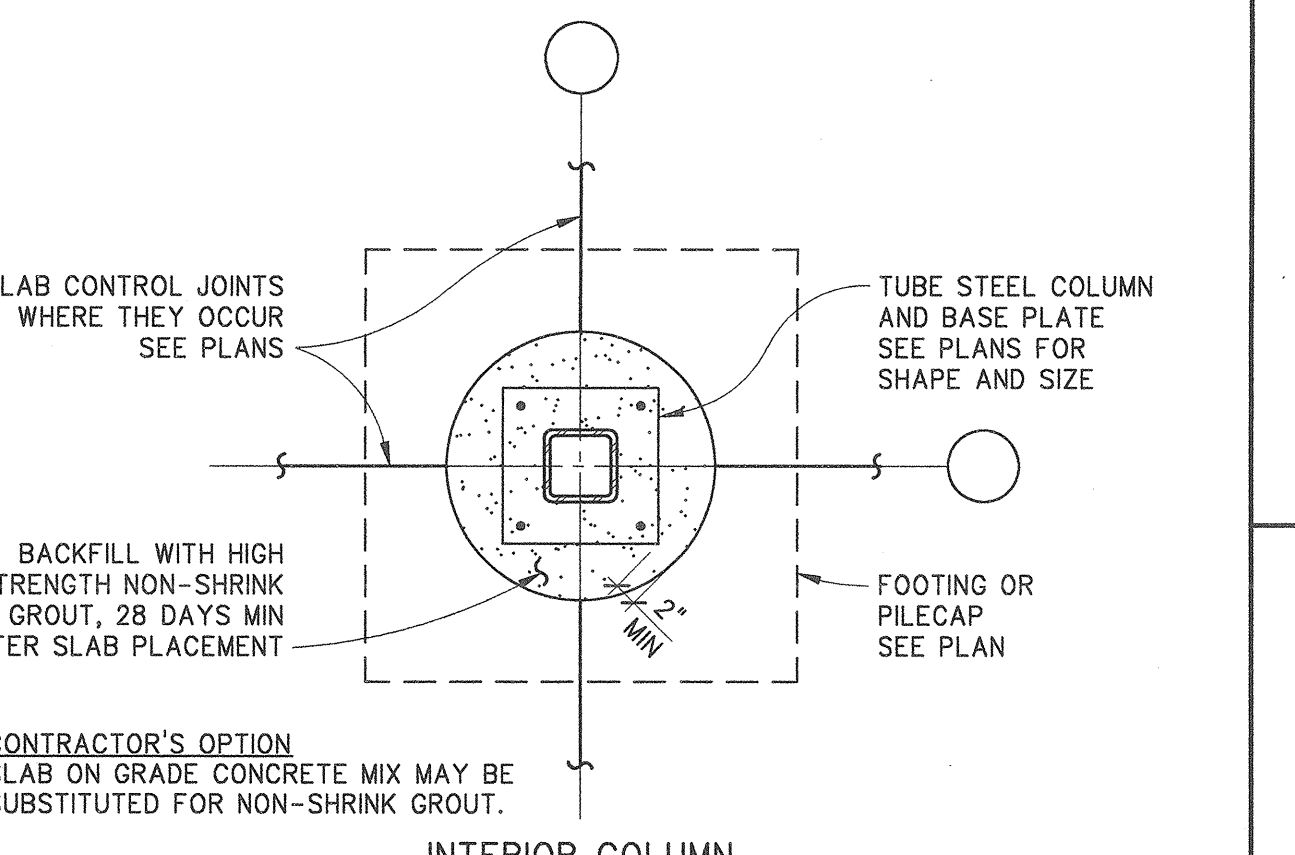
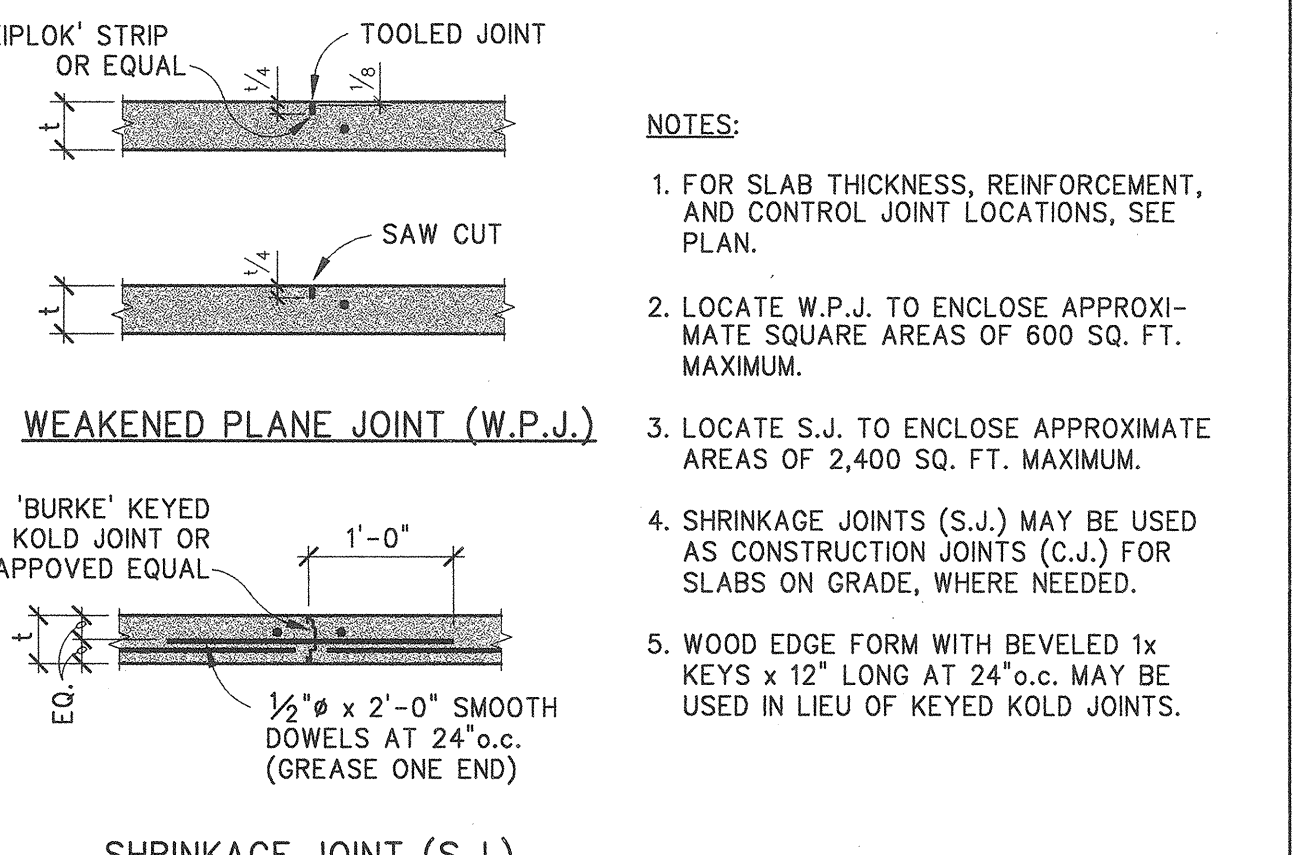
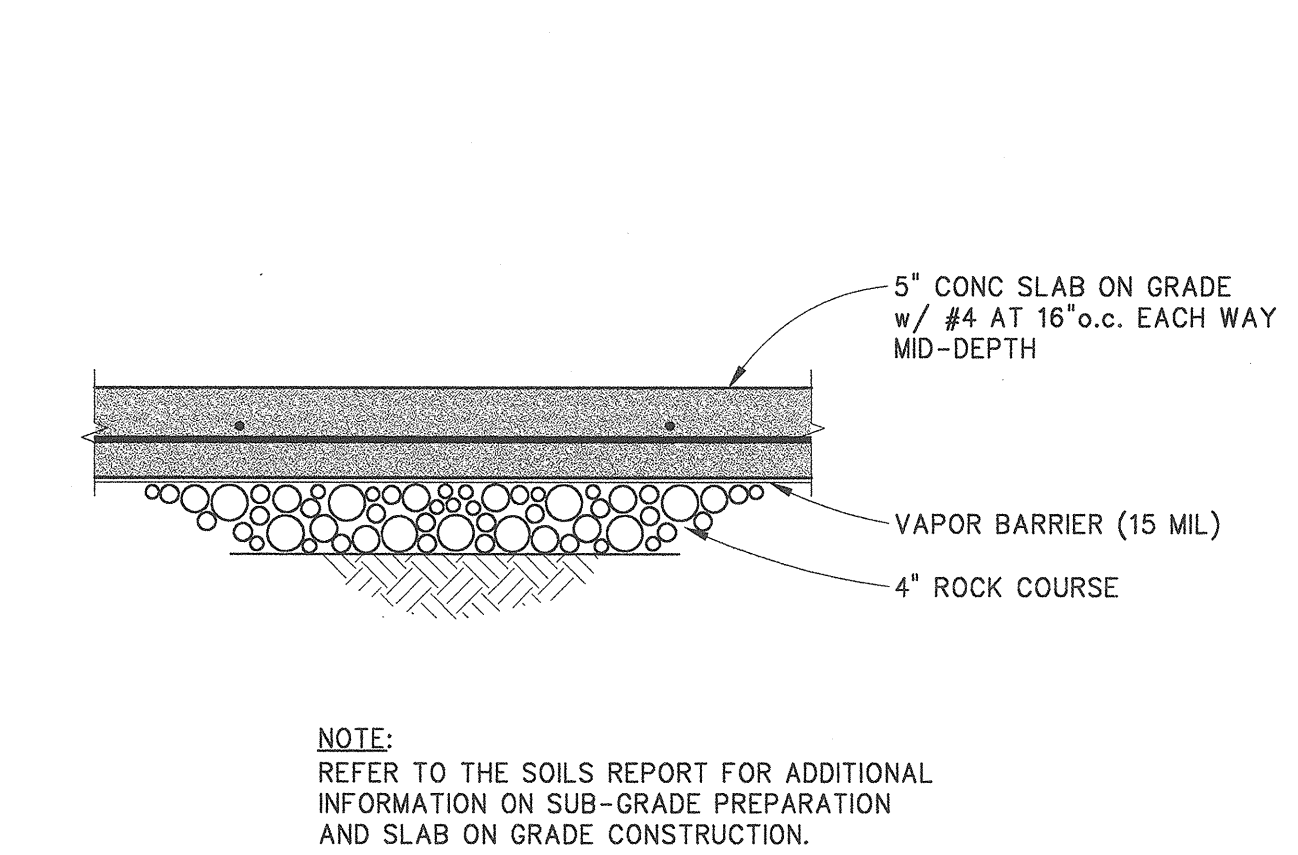
D = Bend diameter

Stirrup Hooks (Tie Bends Similar)

Bar Size	D	A or G	A or G	Approx. H
#3	1 1/2"	4"	4"	2 1/2"
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 1/2"
#6	4 1/2"	1'-0"	7 1/2"	4 1/2"
#7	5 1/4"	1'-2"	9"	5 1/4"
#8	6"	1'-4"	10 1/2"	6"

Seismic Stirrup/Tie

Size	D	A or G	A or G	Approx. H
#3	1 1/2"	4 1/4"	4 1/4"	3"
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	5 1/2"	5 1/2"	3 1/2"
#6	4 1/2"	7 1/2"	7 1/2"	4 1/2"
#7	5 1/4"	9"	9"	5 1/4"
#8	6"	10 1/2"	10 1/2"	6"



CONCRETE REINF HOOKS

SCALE: NONE 1

SLAB ON GRADE

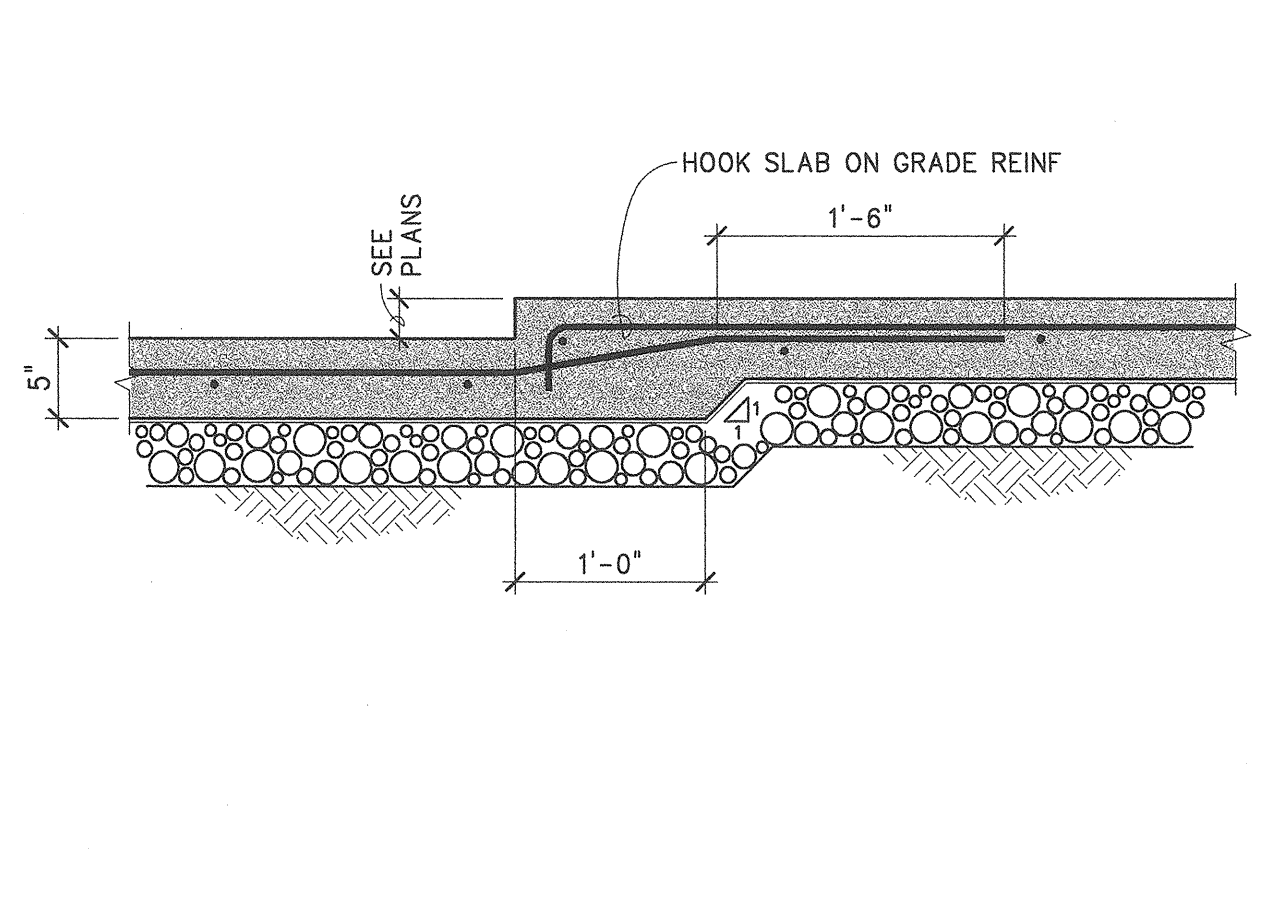
SCALE: NONE 2

S.O.G. CONTROL JOINTS

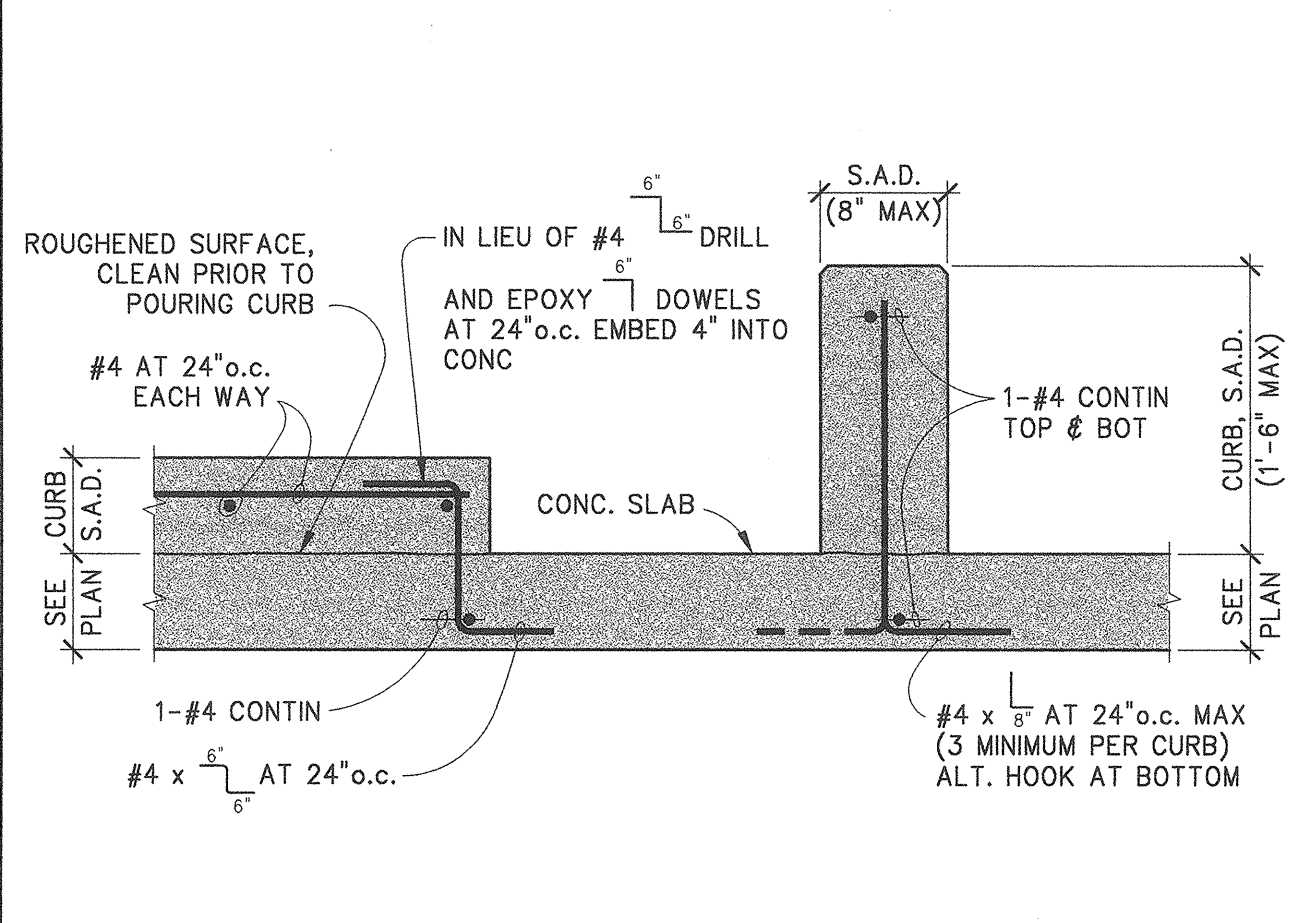
SCALE: NONE 3

SLAB BLOCKOUT

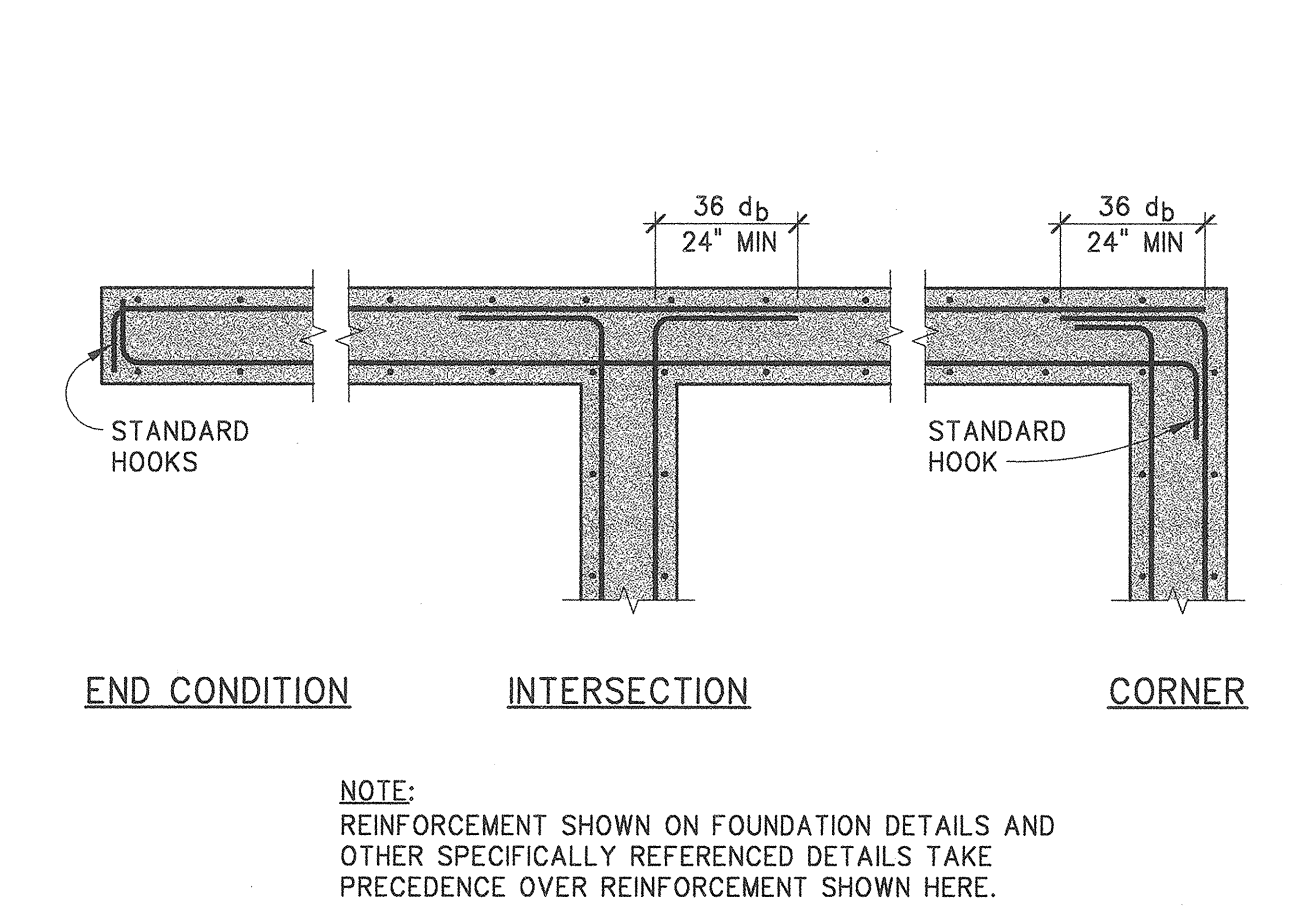
SCALE: NONE 4



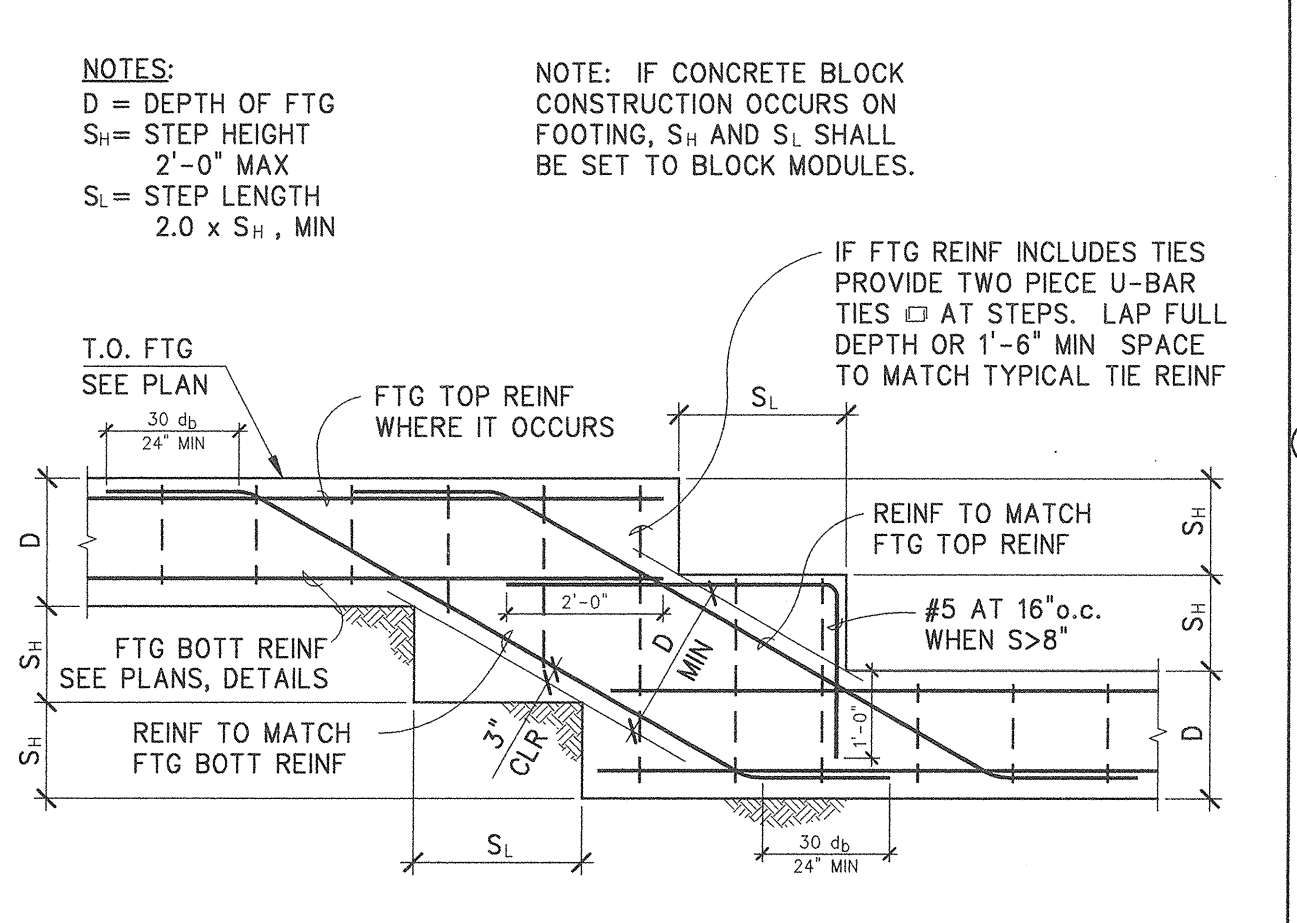
SCALE: 1" = 1'-0" 5



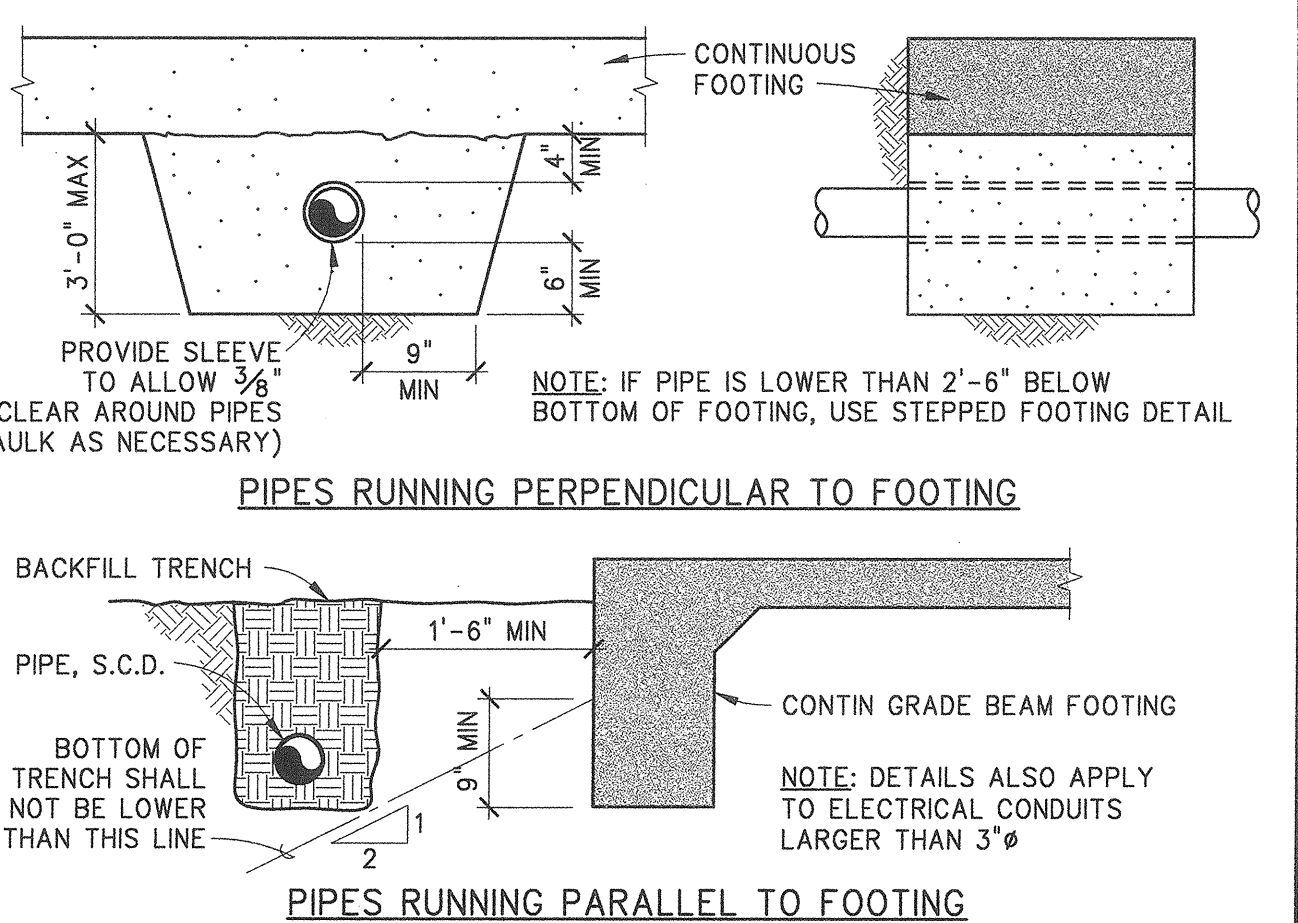
SCALE: NONE 6



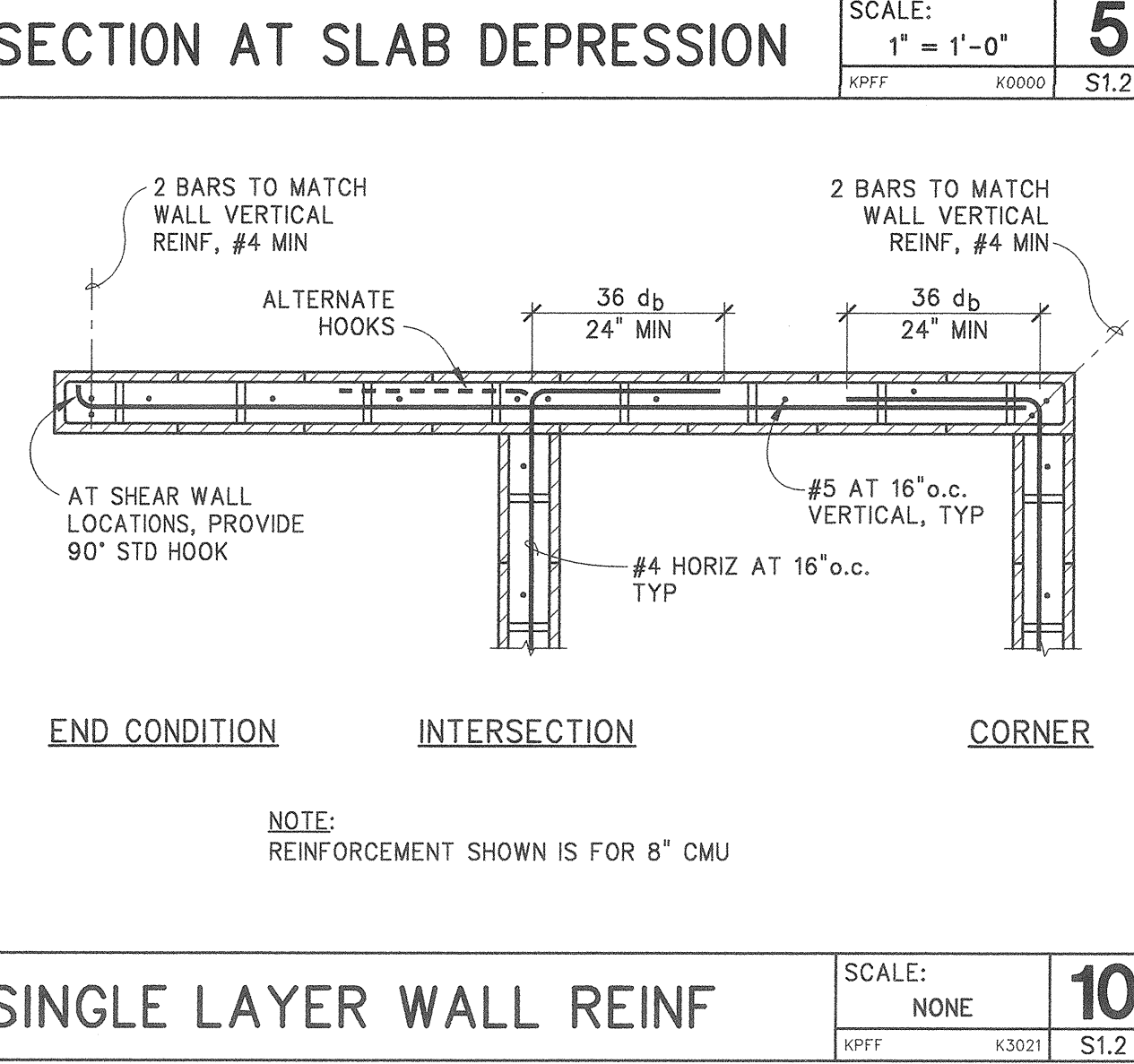
SCALE: NONE 7



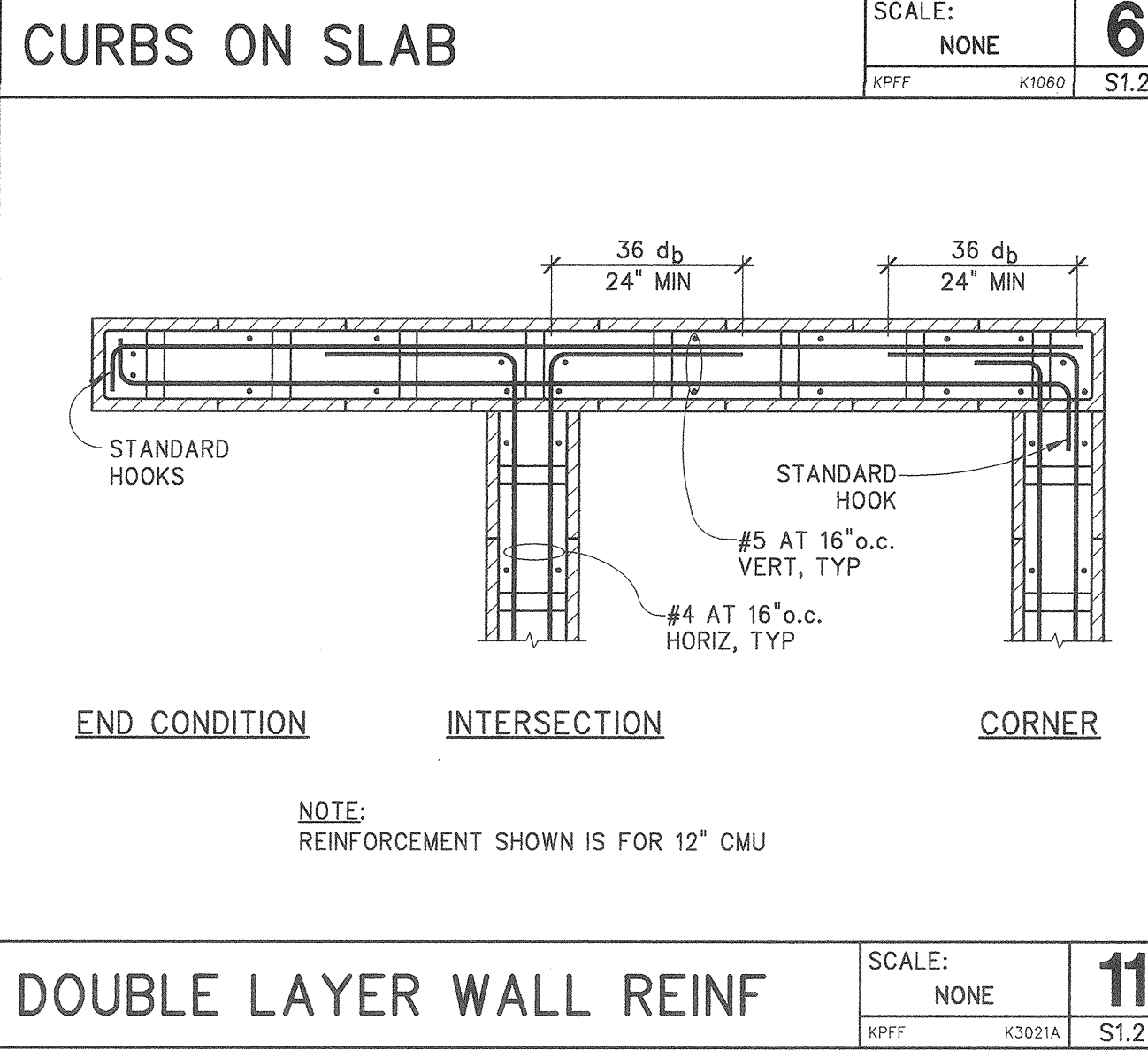
SCALE: NONE 8



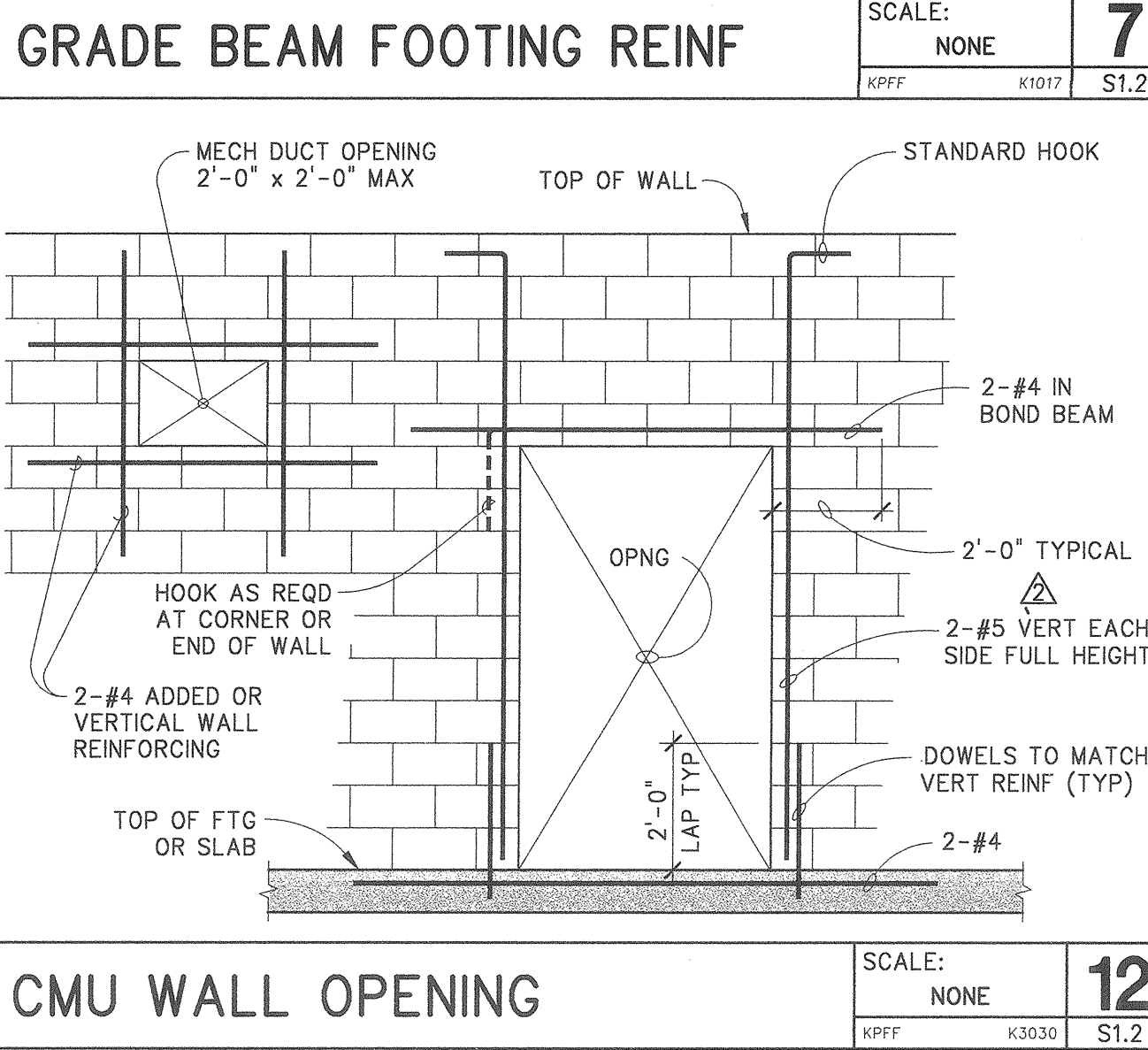
SCALE: NONE 9



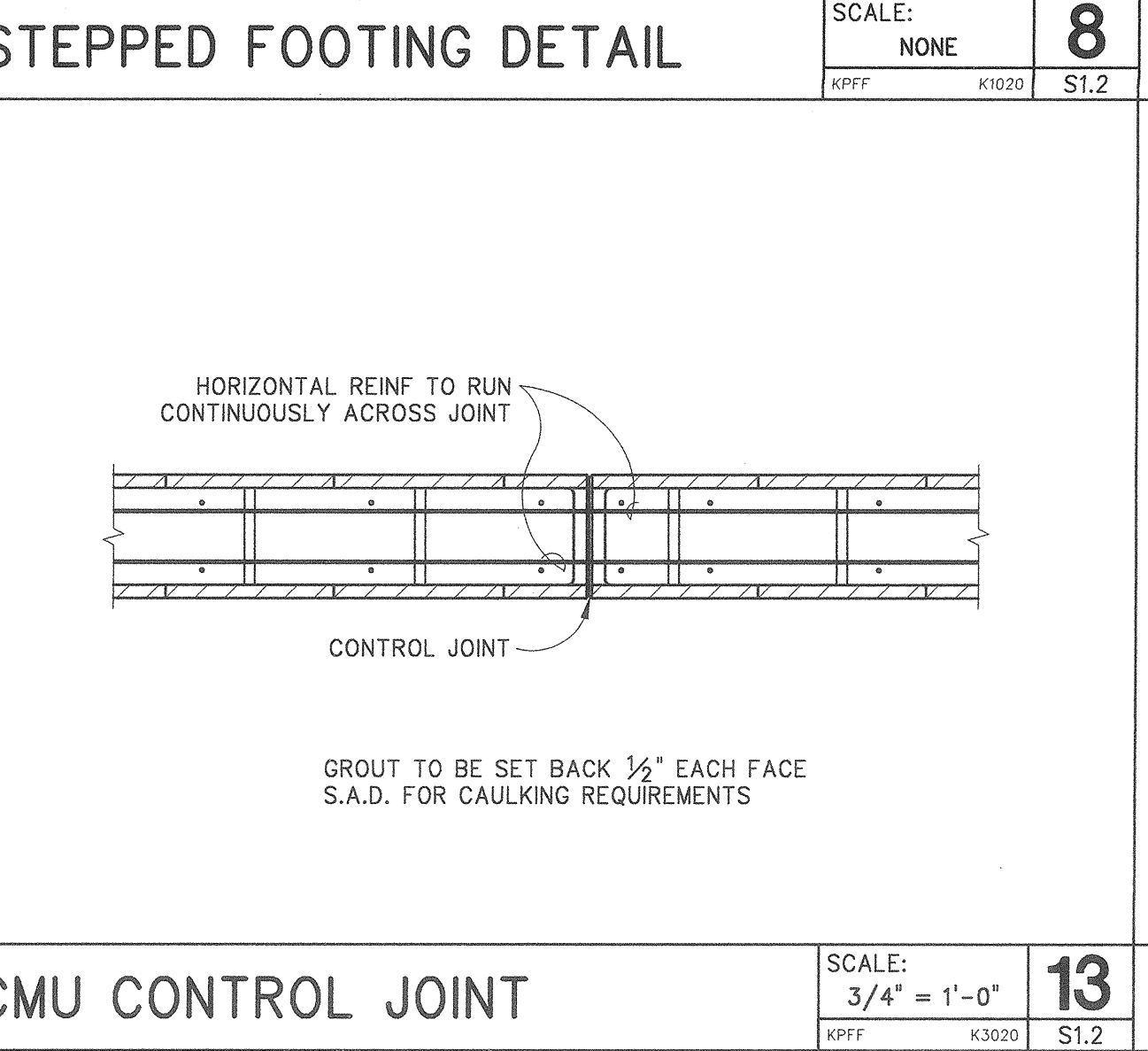
SCALE: NONE 10



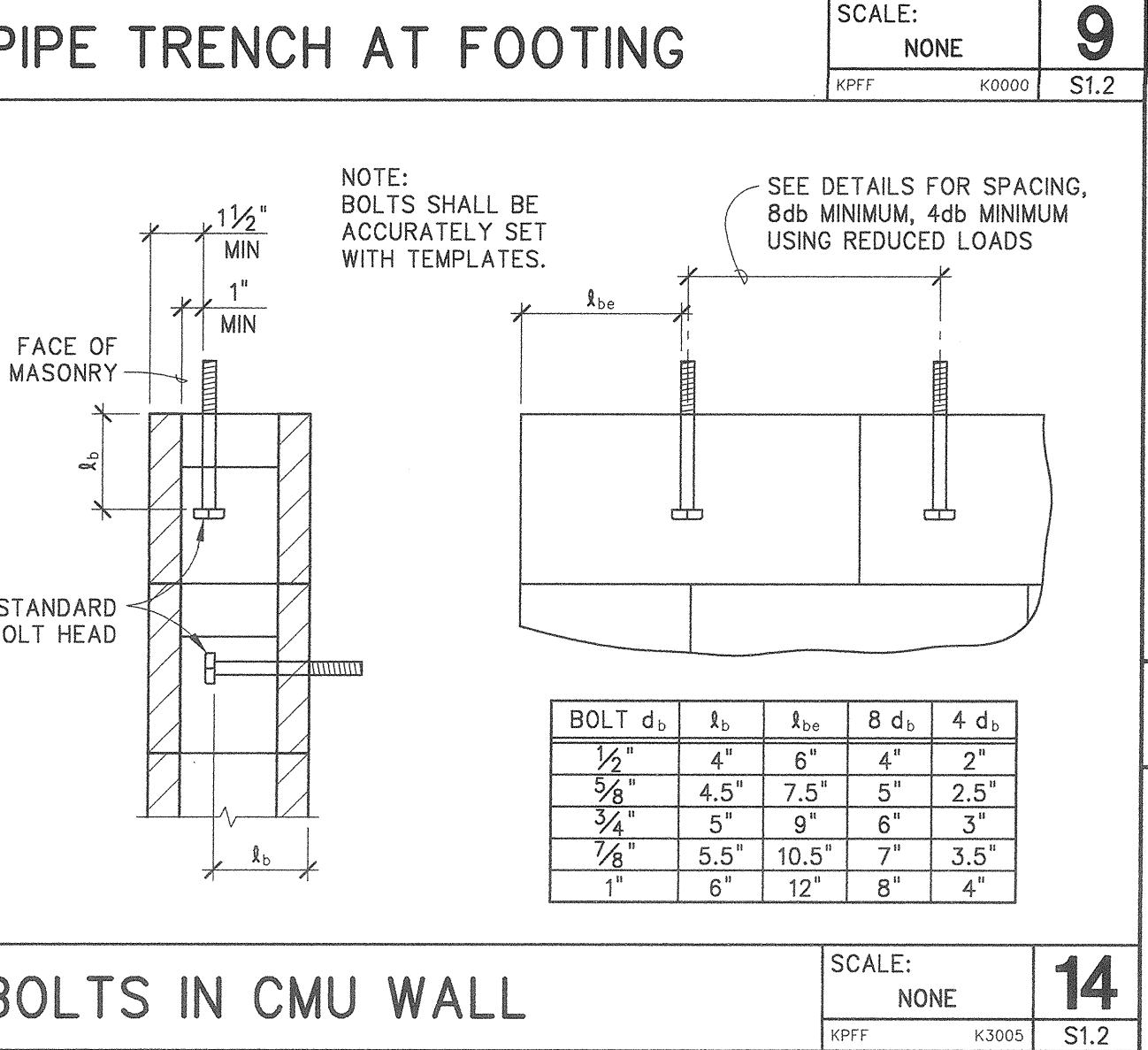
SCALE: NONE 11



SCALE: NONE 12



SCALE: 3/4" = 1'-0" 13



SCALE: NONE 14

**MOUNTAIN VIEW
SENIOR CENTER**

DATE: APRIL 18, 2005

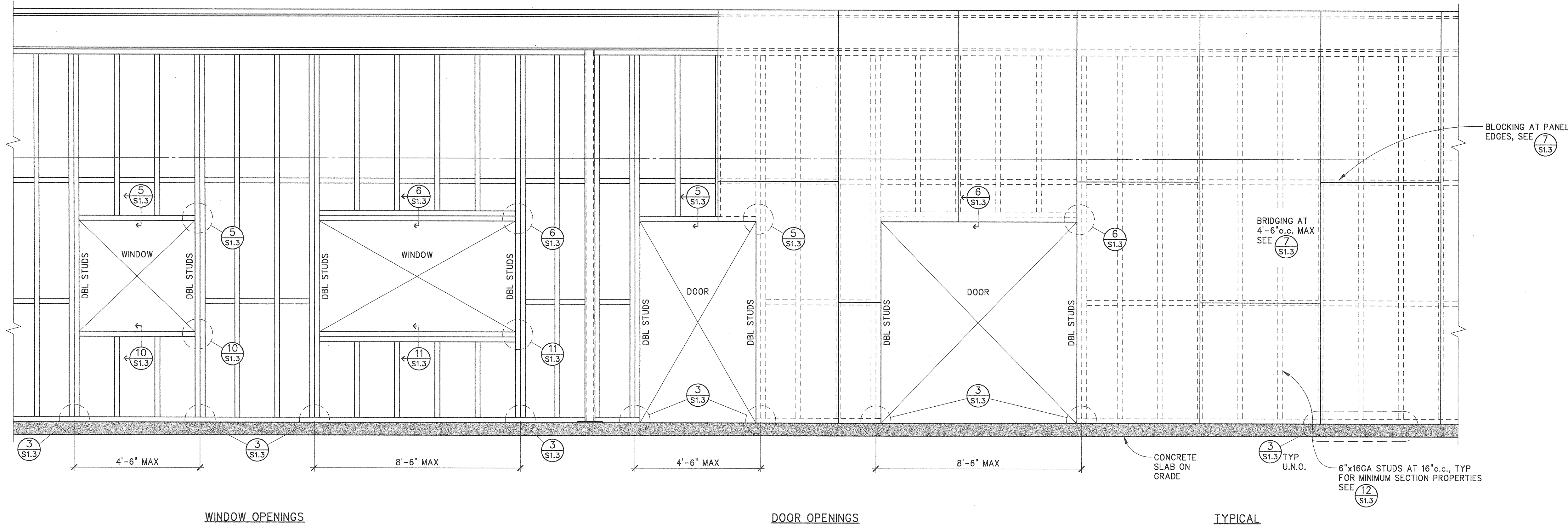
REVISIONS:

CONSTRUCTION
SET

SHEET TITLE:
TYPICAL DETAILS
- CONCRETE
AND MASONRY

DRAWN BY: FC
CHECKED BY: TLH
JOB NO: K103044

SHEET
S1.2



TYPE	PLYWOOD SHEATHING	FASTENER SPACING AT PANEL EDGES	FASTENER SPACING AT PANEL EDGE TO BOTTOM TRACK	BOTTOM TRACK TO CONCRETE FASTENER SPACING	JOISTS OR BLOCKS TO TOP PLATE	ALLOW SHEAR
	STRUCT 1	#8 FLAT HEAD SCREWS			SIMPSON® A35 ANCHORS	LB/FT
A	1/2" THICK	6"	20"	8"	AT 16" o.c.	312
B	1/2" THICK	4"	14"	6"	AT 12" o.c.	396
C	1/2" THICK	3"	10"	4"	AT 6" o.c.	586
D	1/2" THICK	2"	8"	4"	AT 6" o.c.	650

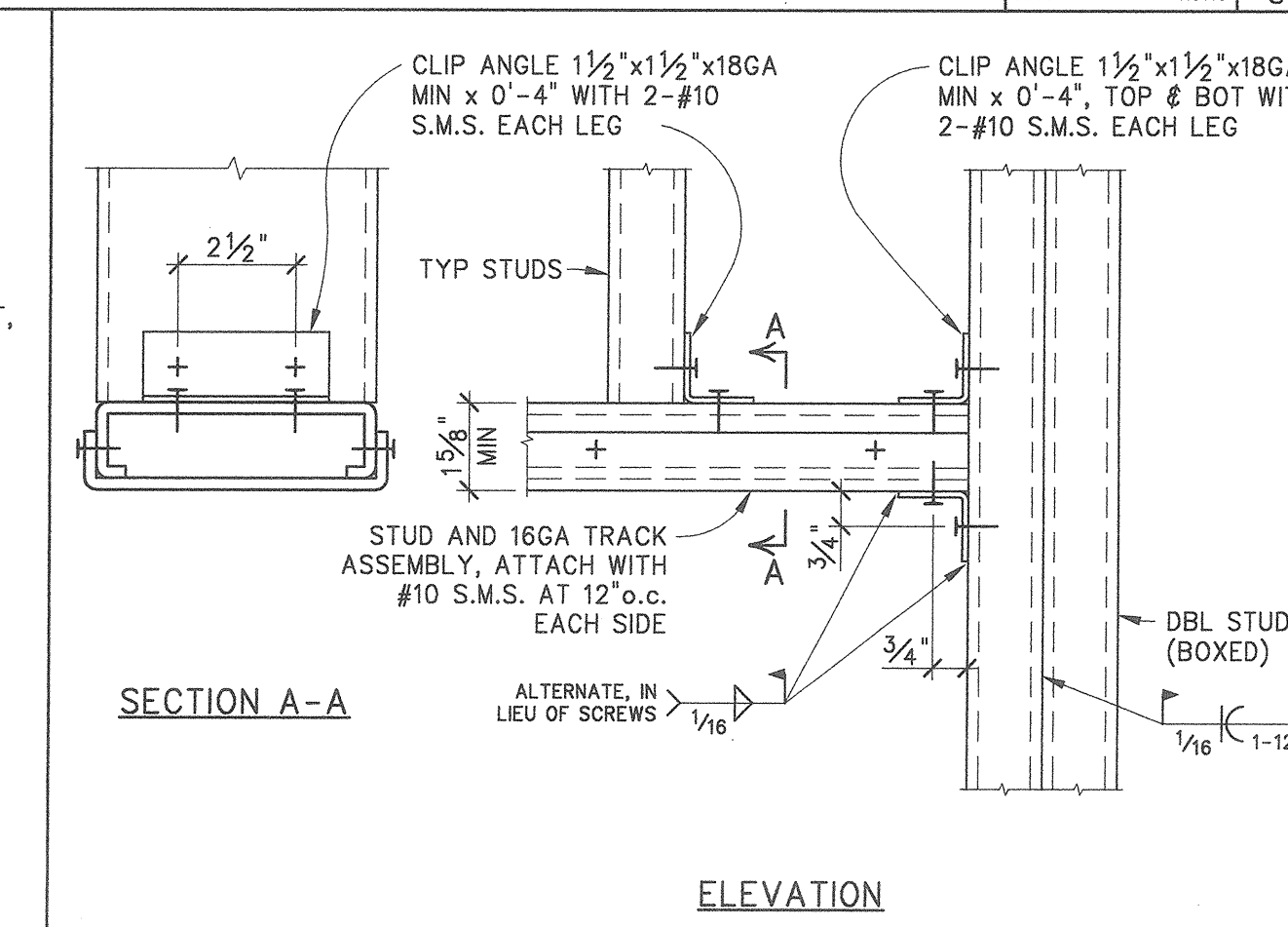
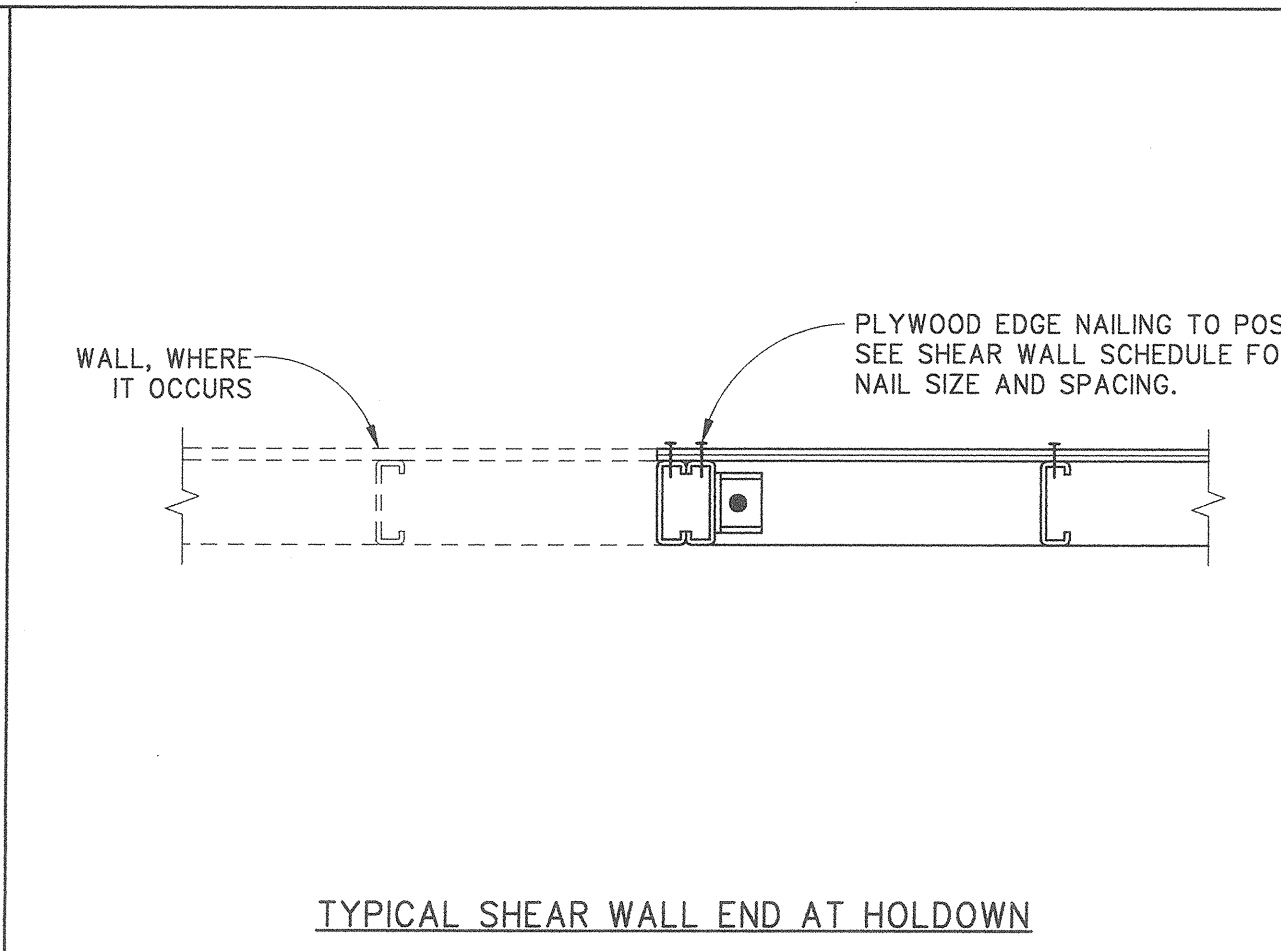
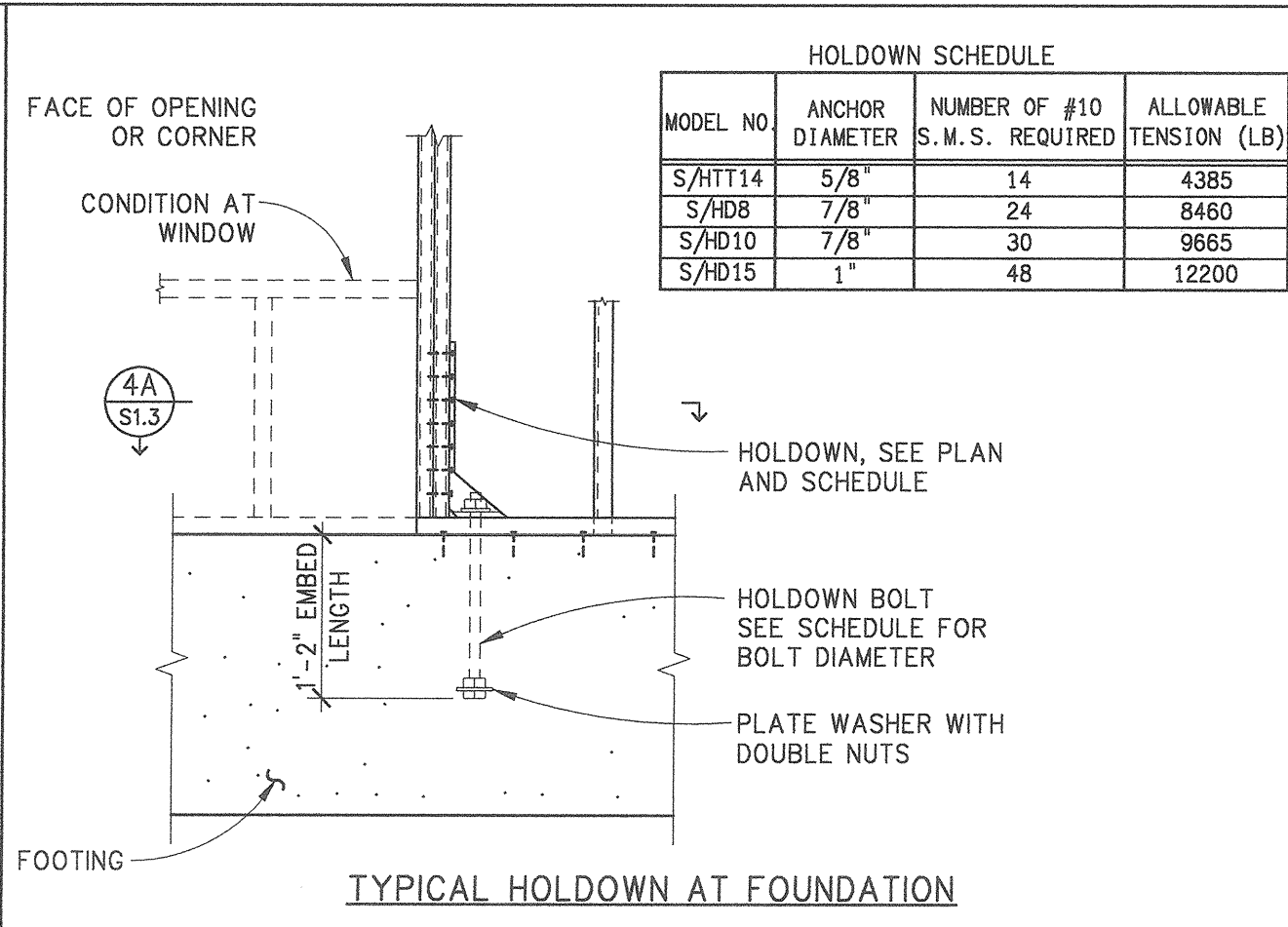
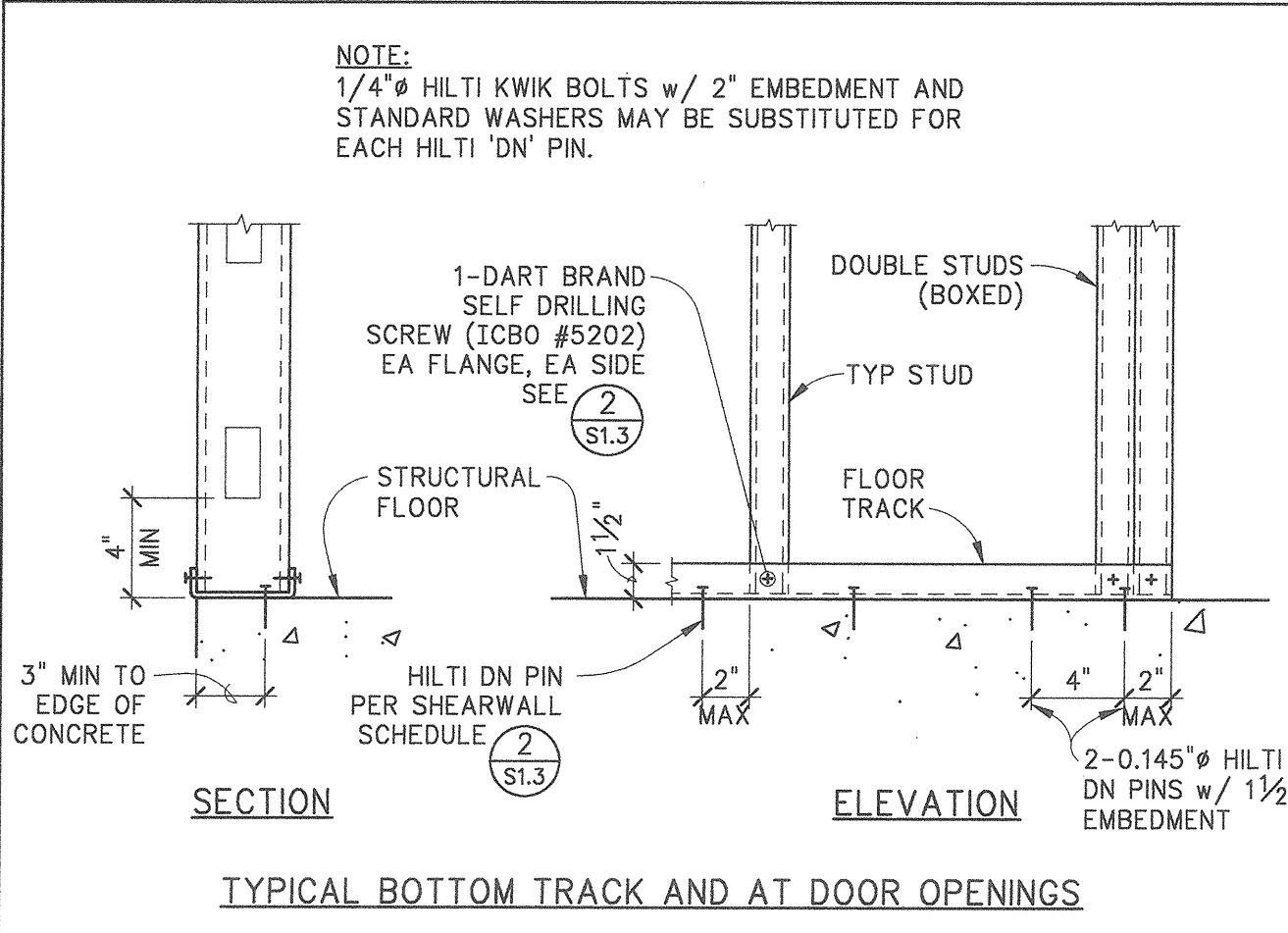
- NOTE:**
- FASTENERS TO ATTACH PLYWOOD TO LIGHT GAGE FRAMING MEMBERS SHALL BE A MINIMUM NO. 8 SCREWS BY 1" FLAT HEAD w/ A MINIMUM HEAD DIAMETER OF 0.292"
 - FASTENERS USED TO ATTACH PLYWOOD TO STRUCTURAL STEEL (I.E. HSS COLUMNS) SHALL BE A MINIMUM 0.144" Ø BY 1 1/2" ET&F PNEUMATIC FASTENERS (ICBO #4144) OR APPROVED EQUAL.
 - SCREWS IN THE FIELD OF THE PANEL SHALL BE INSTALLED 12 INCHES ON CENTER.
 - TOP TRACK TO BOTTOM WF BEAM CONNECTION TO BE 0.145" Ø HILTI X-EDN1 (ICBO #2388) OR APPROVED EQUAL.
 - CONNECTION BETWEEN TOP AND BOTTOM TRACK TO METAL STUD SHALL BE (1) #10 S.M.S. EACH FLANGE EACH SIDE, TYPICAL.
 - CONNECTION BETWEEN BOTTOM TRACK TO CONCRETE SHALL BE 0.145" Ø HILTI X-DN1 FASTENERS WITH 1" MINIMUM EMBED (ICBO #2388) OR APPROVED EQUAL.
 - METAL STUDS FOR ALL SHEARWALLS SHALL BE 6"x18GA FOR MINIMUM SECTION PROPERTIES, SEE S1.3.
 - FOR INTERIOR SHEAR WALL CONNECTIONS TO ROOF DIAPHRAGM, SEE S1.3.



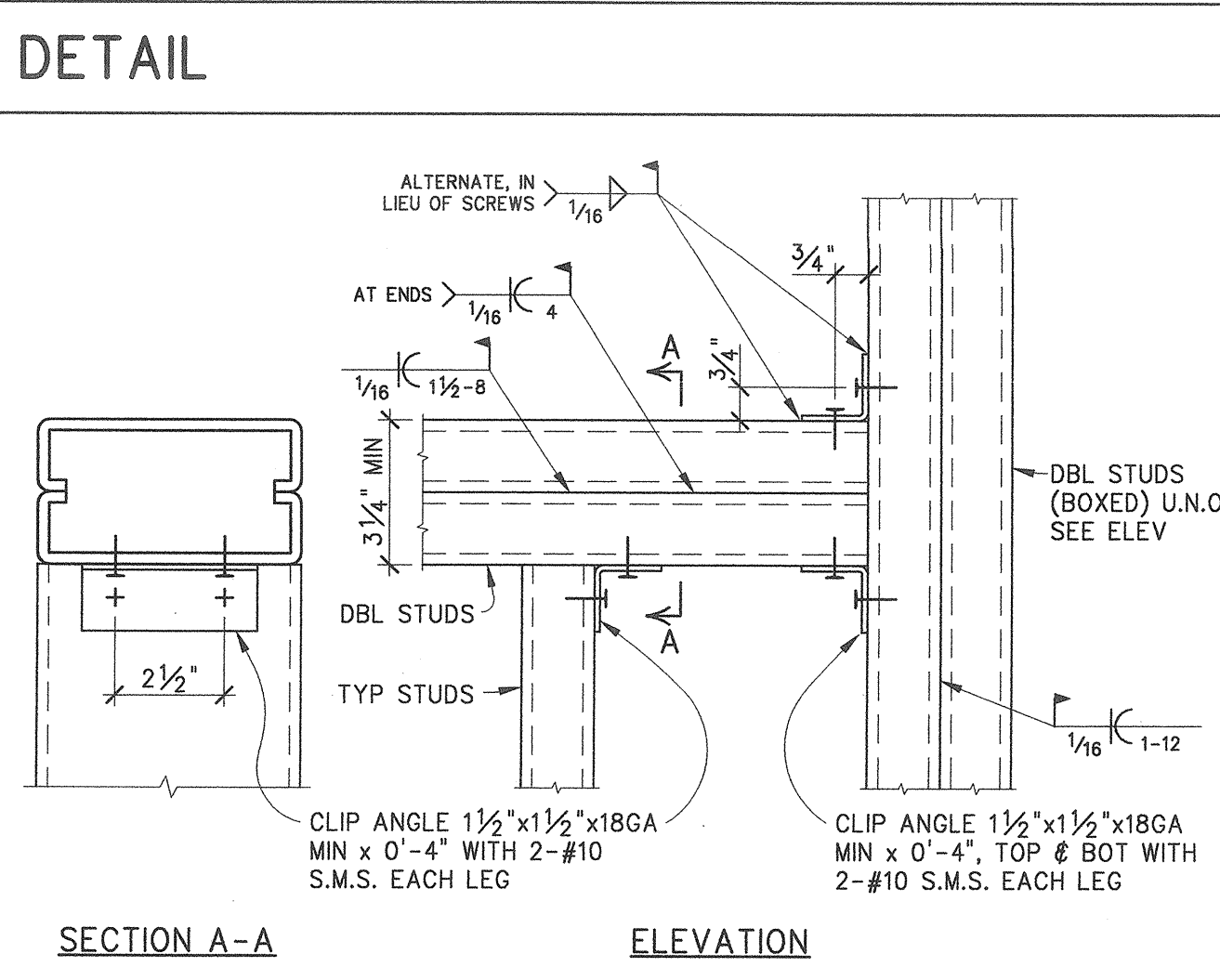
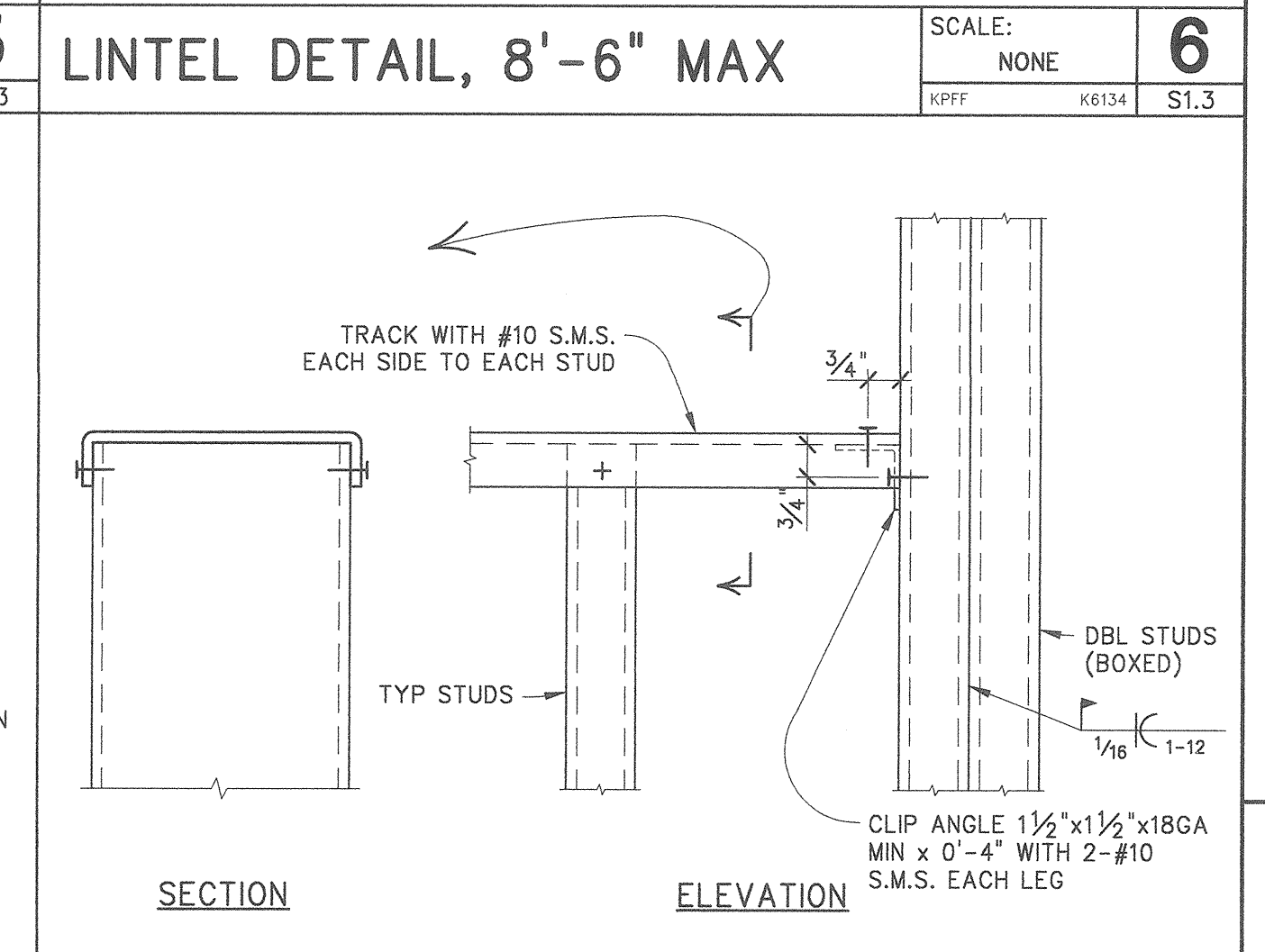
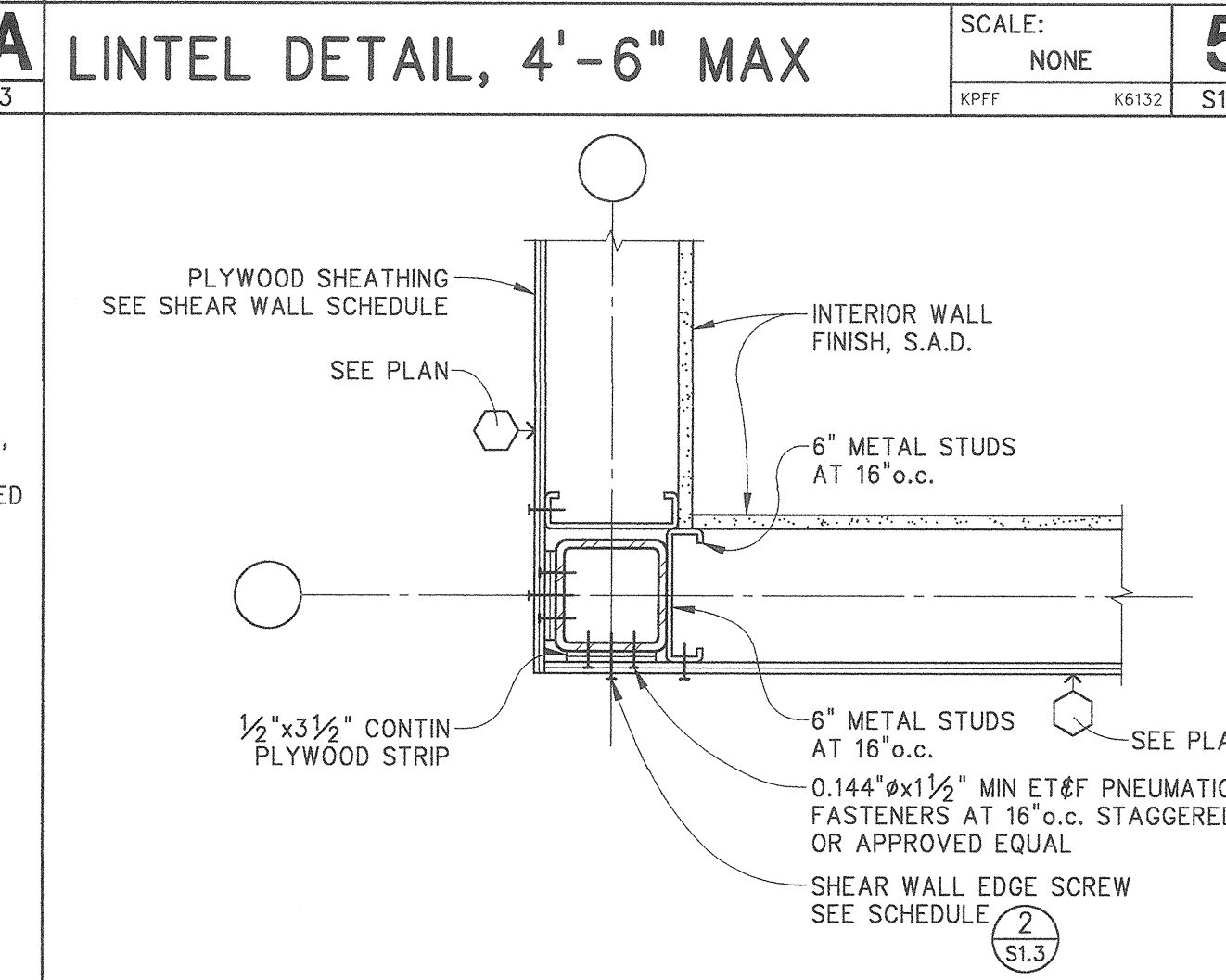
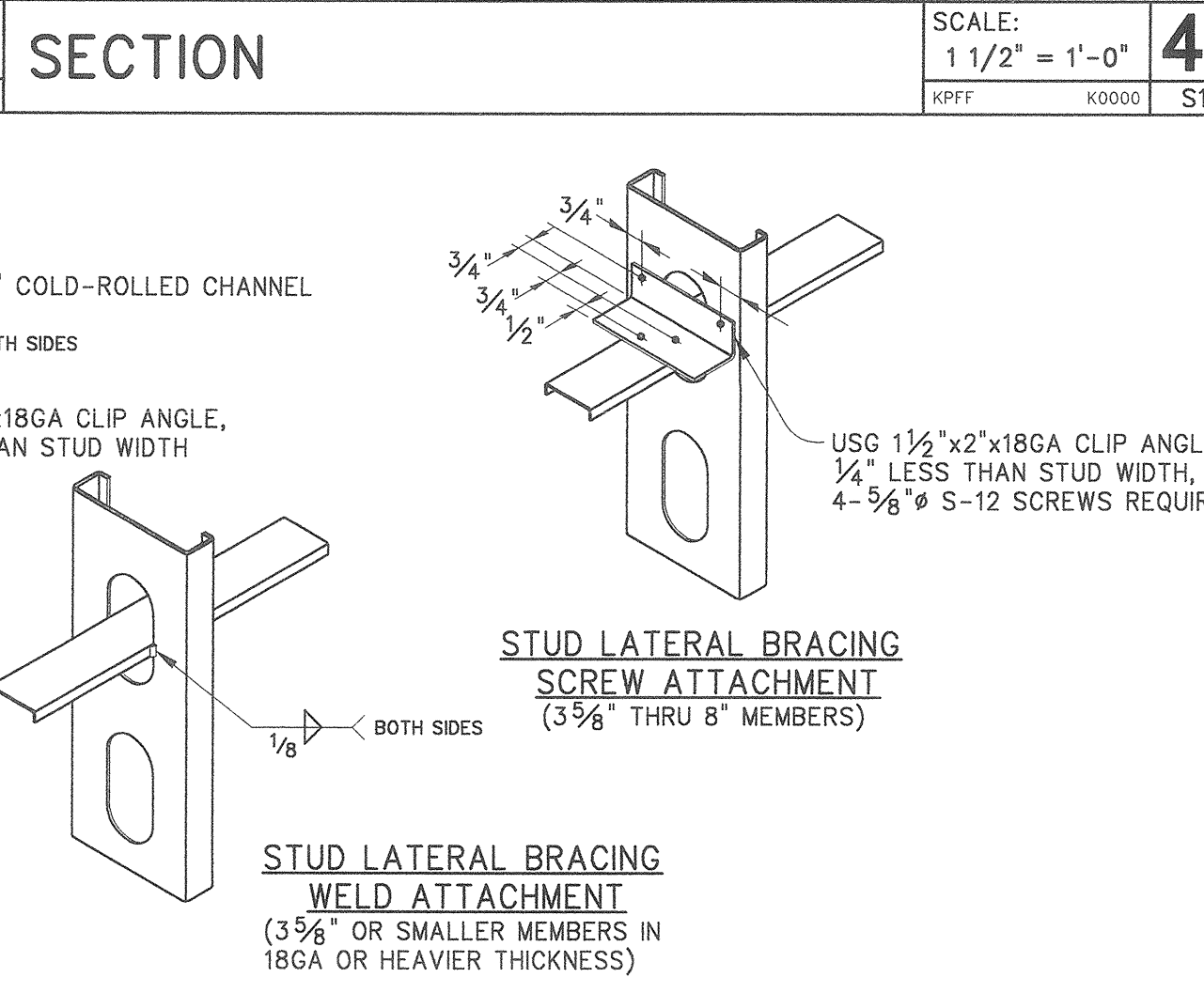
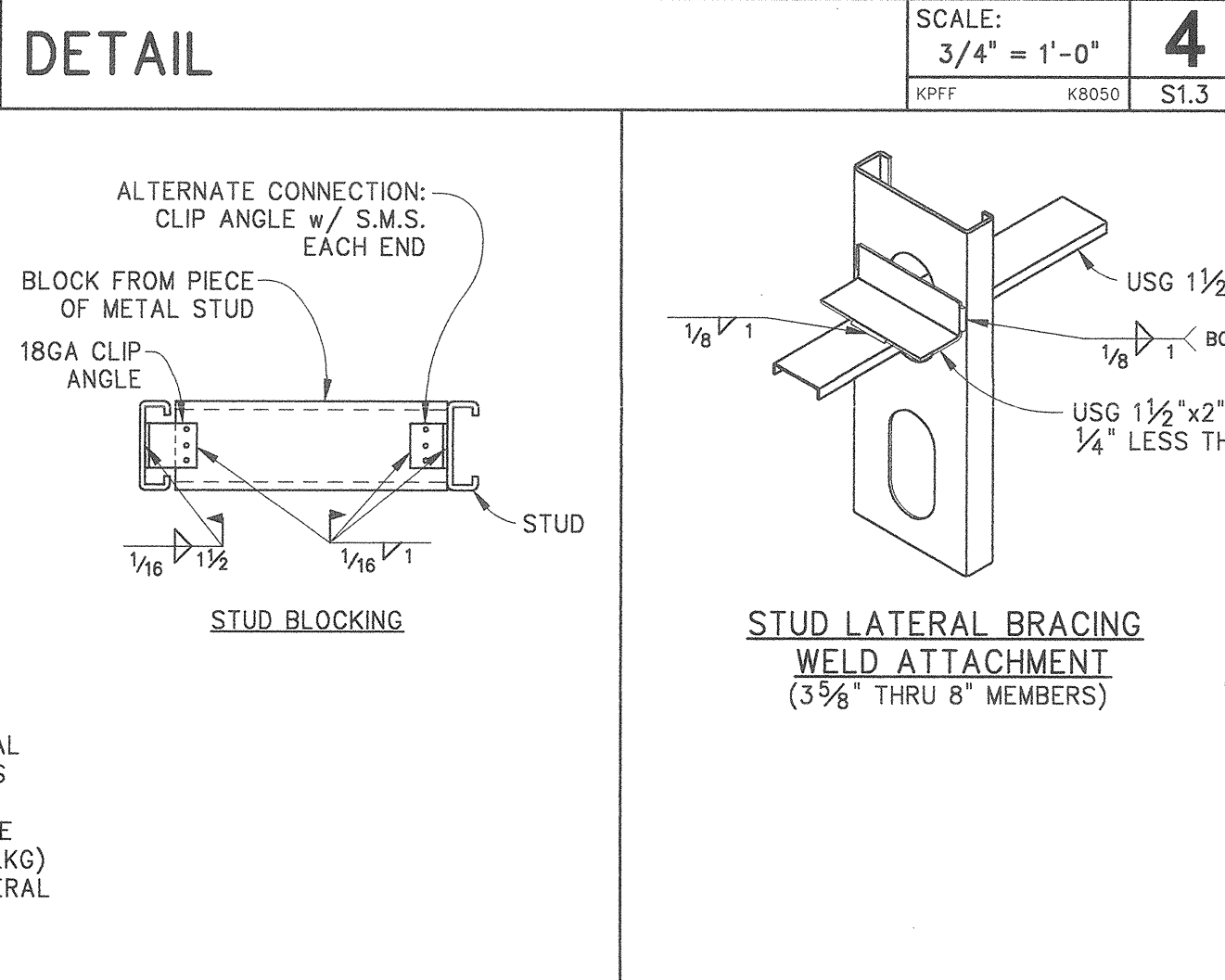
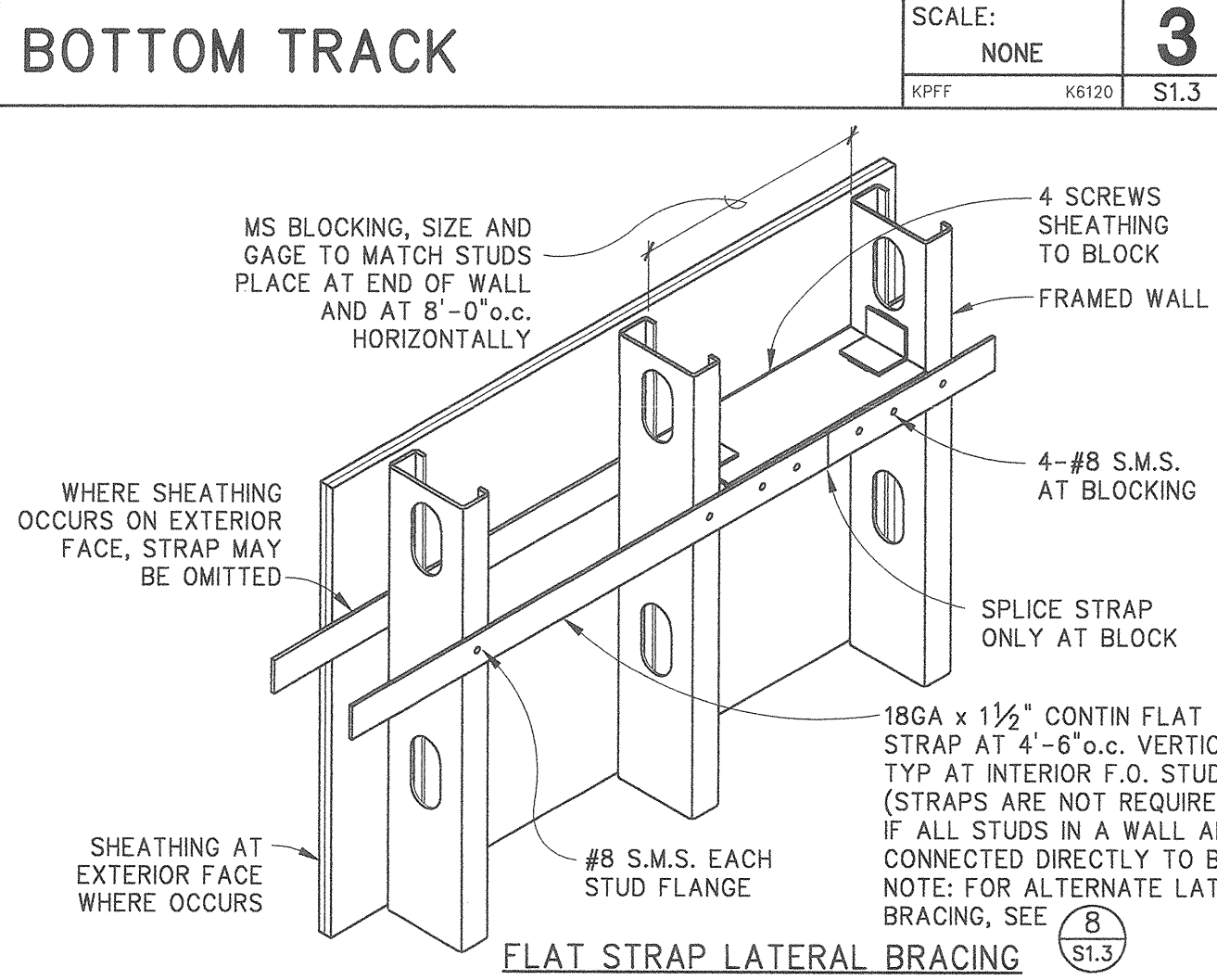
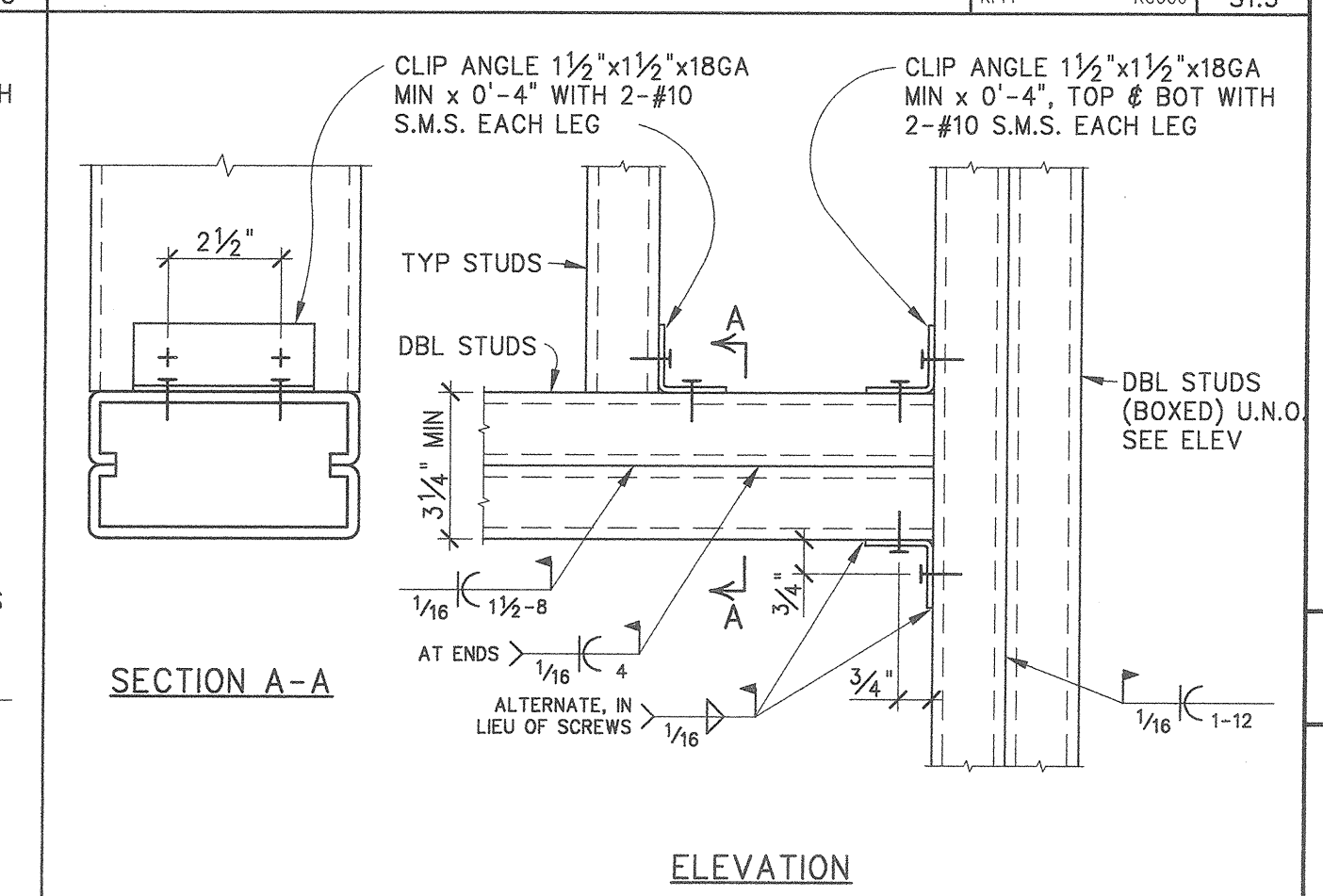
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www.kpff.com ffp.kpff.com

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266 ESCUELA AVE
MOUNTAIN VIEW, CA

EXTERIOR AND SHEAR WALL METAL STUD WALL FRAMING ELEVATION

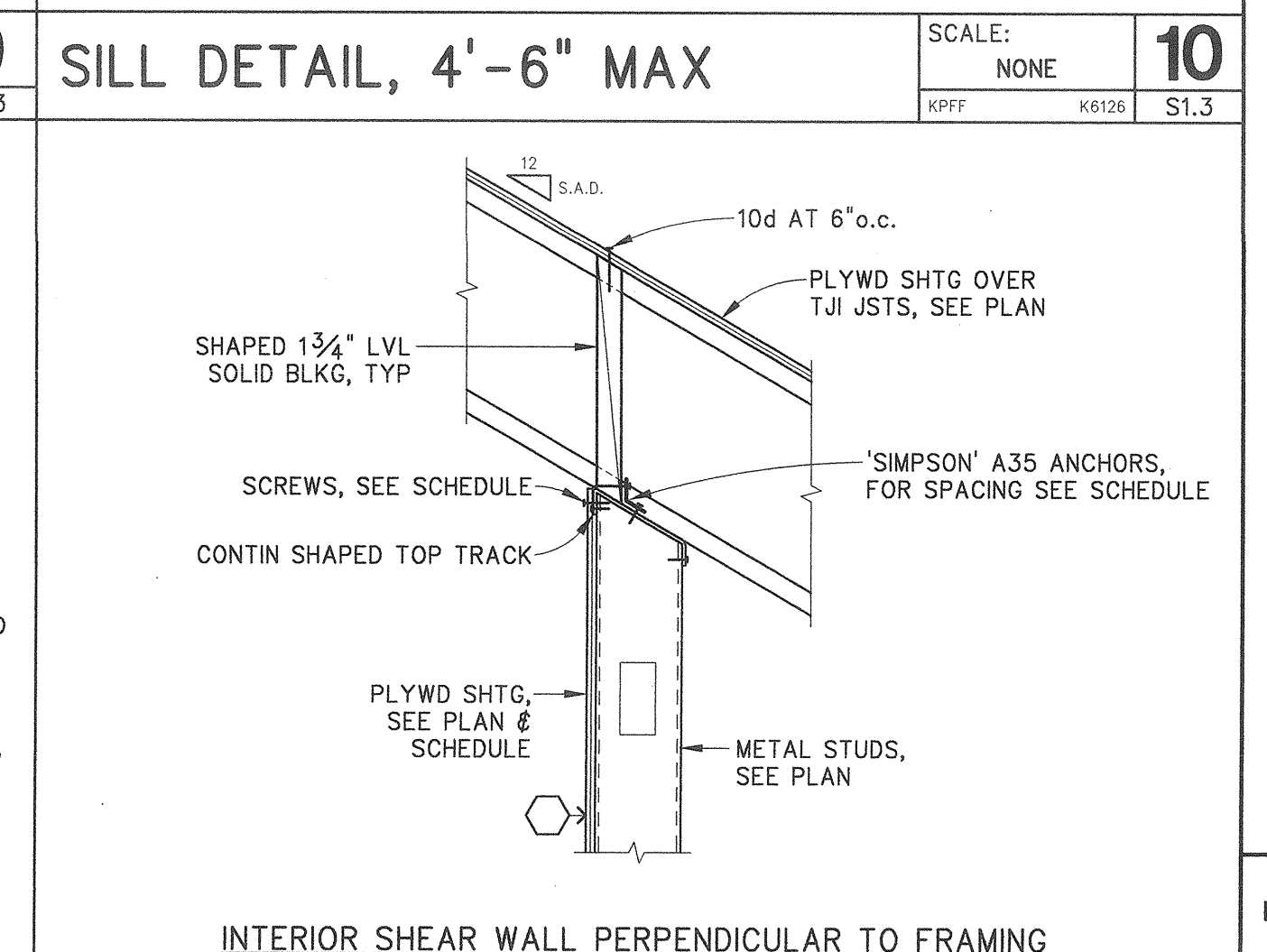
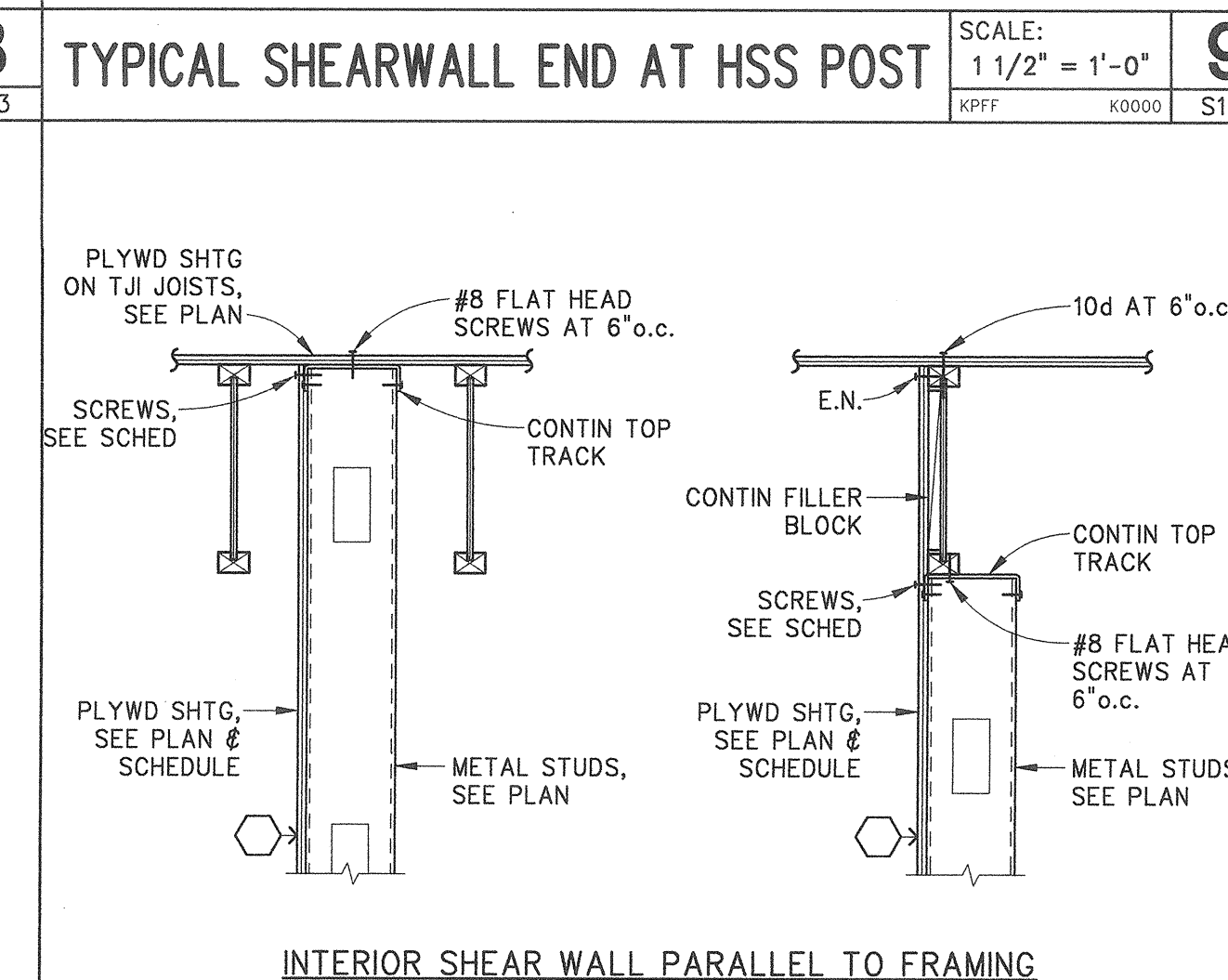
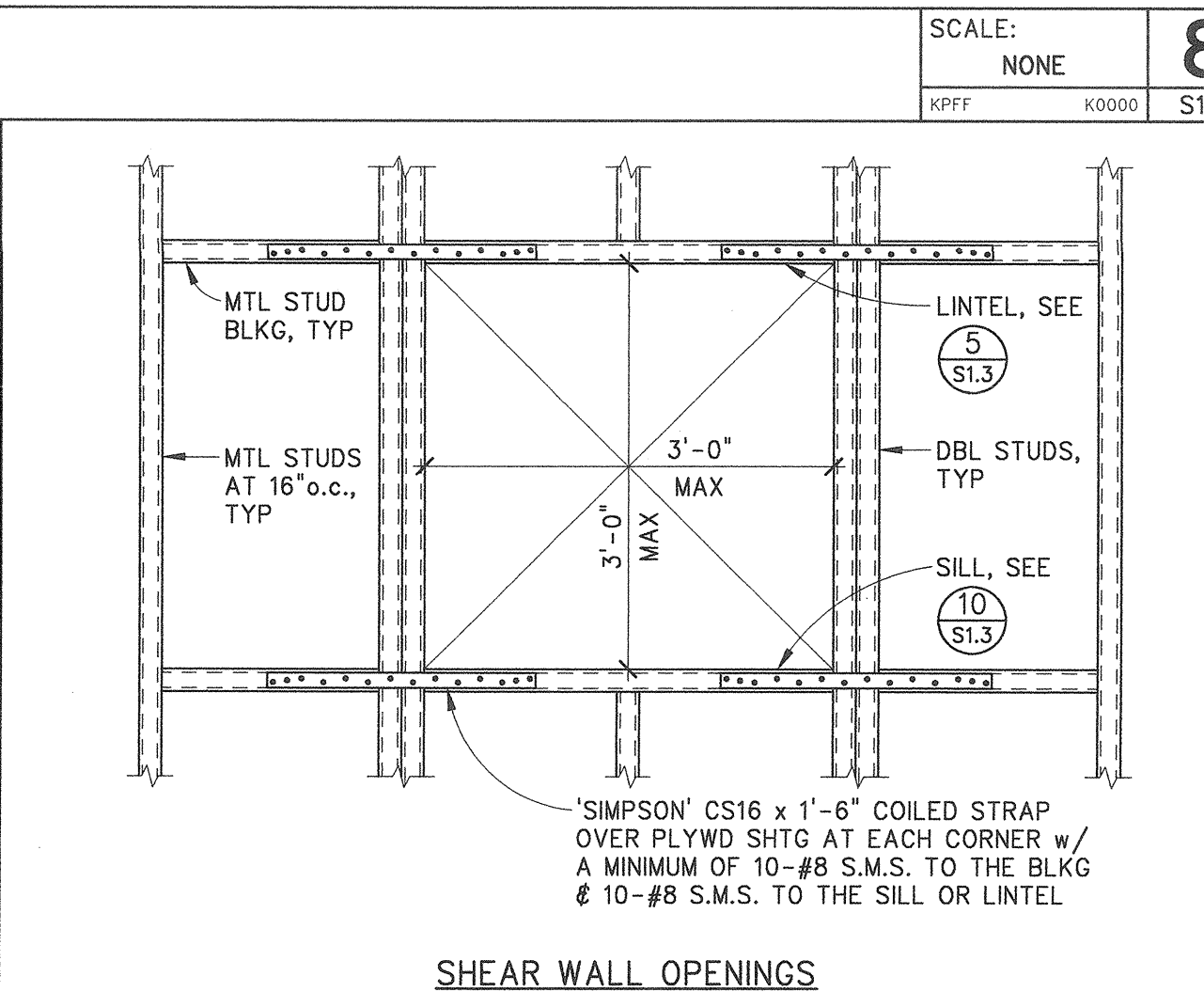


SHEARWALL SCHEDULE



STRUCTURAL METAL STUD PROPERTIES

MARK	WIDTH In	GAGE In	FLANGE In	LIP In	A(gross) in 2	Sxx in 3	Ixx in 4	Rx in	Iyy in 4	Ry in
800S182-54	8	16	1-5/8	0.500	0.558	0.953	2.860	2.267	0.180	0.570
800S150-54	6	16	1-1/2	0	0.509	0.843	2.611	2.266	0.091	0.422
800S182-54	8	16	1-5/8	0.500	0.670	1.397	5.736	2.927	0.194	0.539
800S150-54	6	16	1-1/2	0	0.622	0.963	4.835	2.898	0.096	0.393



SILL DETAIL, 8'-6" MAX

STRUCTURAL METAL STUD PROPERTIES

DETAIL

SECTION

SECTION

DATE: APRIL 18, 2005

REVISIONS:

CONSTRUCTION SET

SHEET TITLE:
TYPICAL DETAILS - LIGHT METAL WALL FRAMING

DRAWN BY: FC
CHECKED BY: TLH
JOB NO: K103044
SHEET
S1.3



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SENIOR CENTER**

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MOUNTAIN VIEW, CA

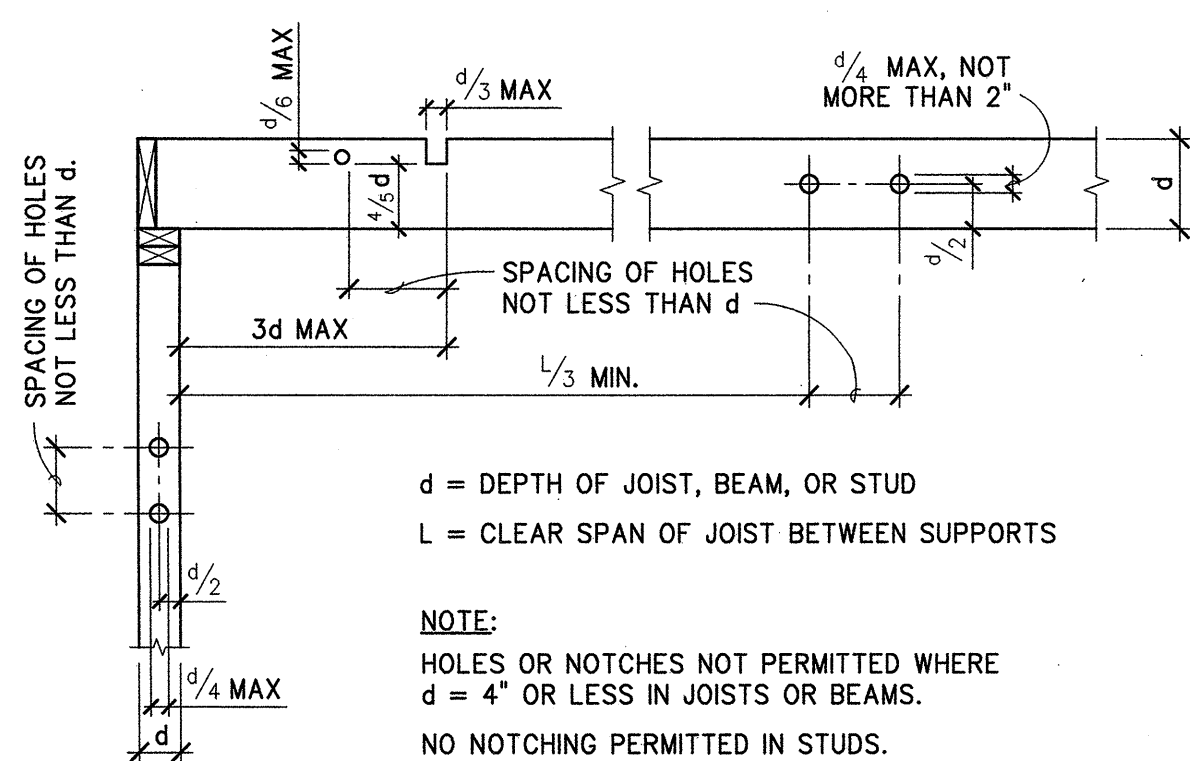
DATE: APRIL 18, 2005

REVISIONS:

CONSTRUCTION
SET

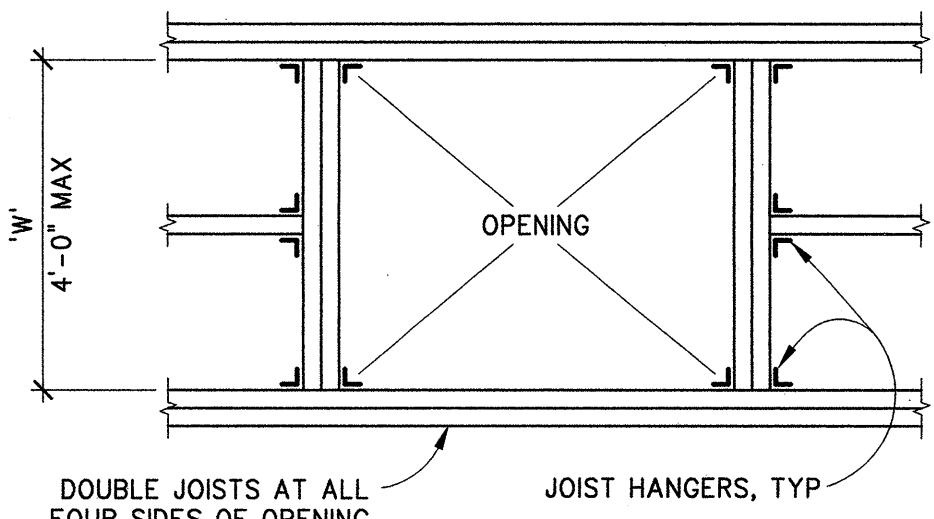
SHEET TITLE:
**TYPICAL DETAILS
- WOOD**

DRAWN BY: FC
CHECKED BY: TLH
JOB NO: K103044
SHEET
S1.4



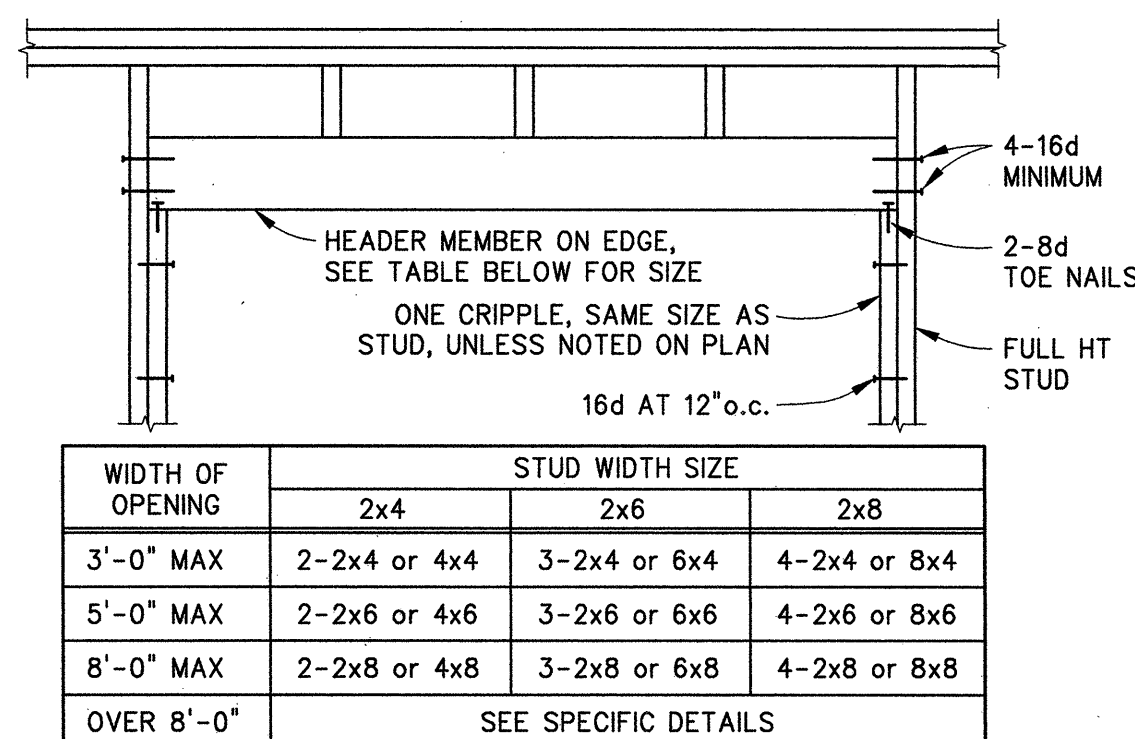
HOLES OR NOTCHES

SCALE: NONE
KFF K8000 S1.4



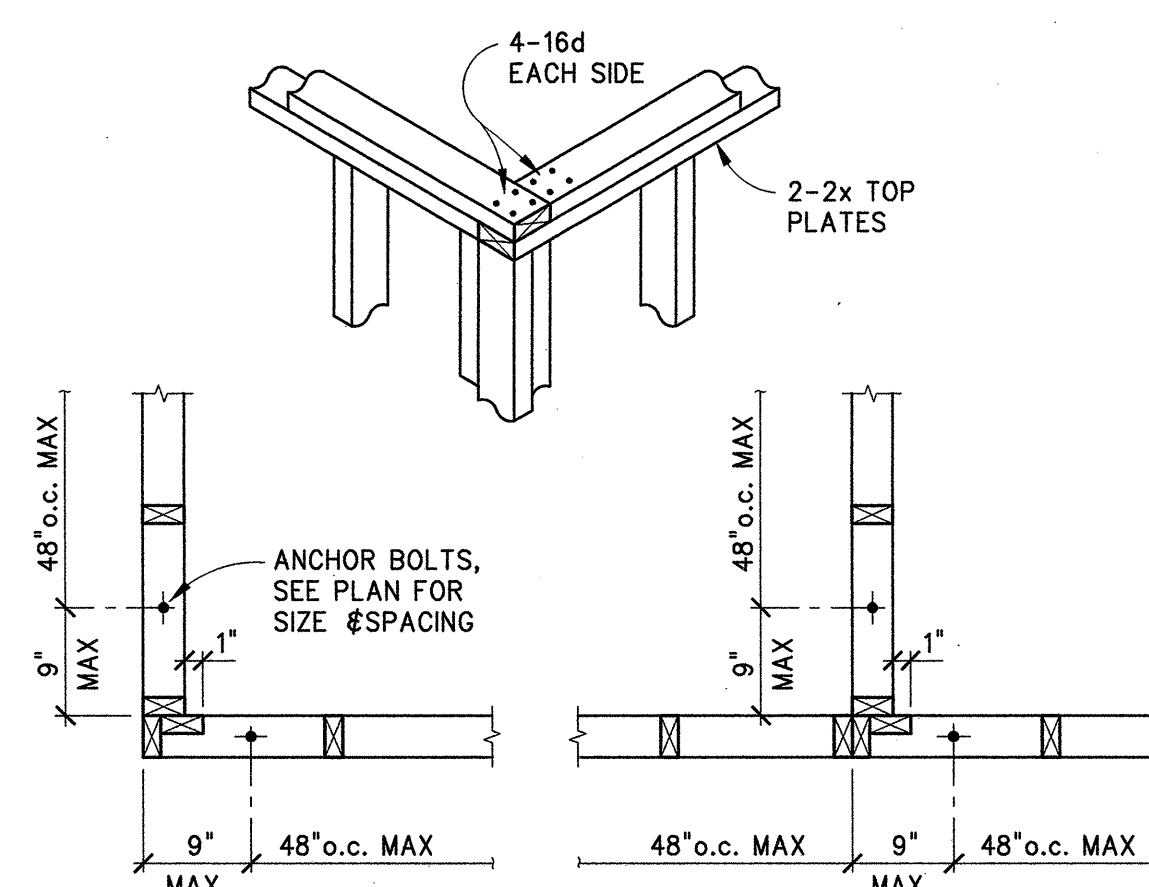
FRAMING AT OPENINGS AT ROOF OR FLOOR

SCALE: NONE
KFF K8000 S1.4



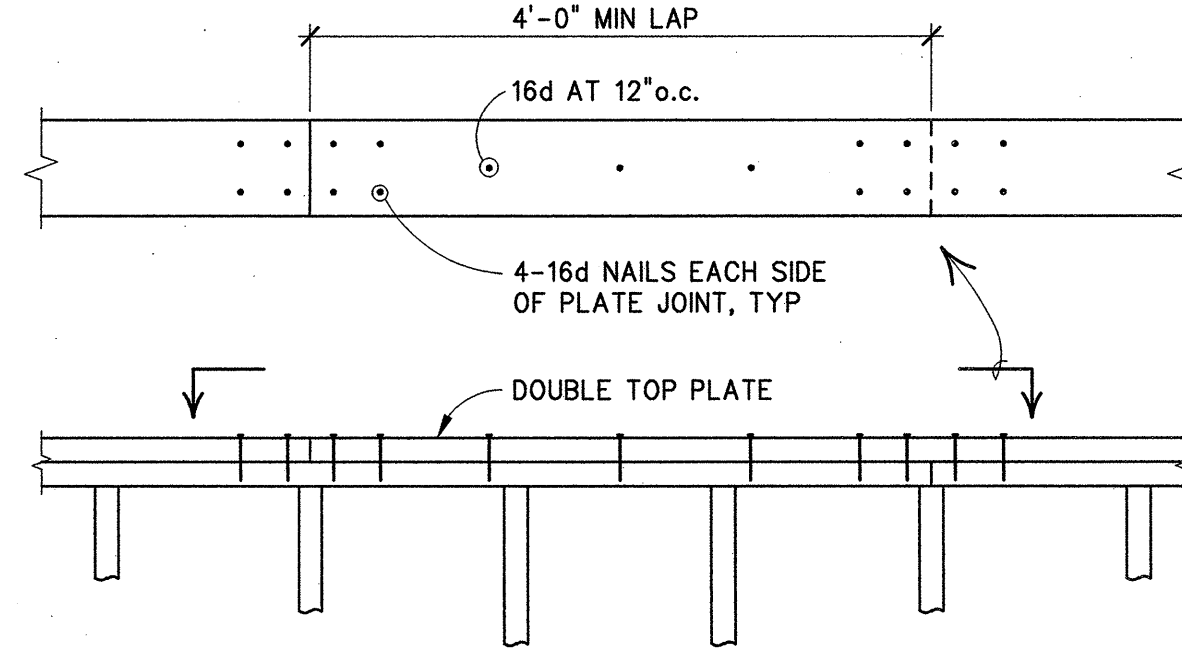
HEADER SCHEDULE

SCALE: NONE
KFF K8000 S1.4



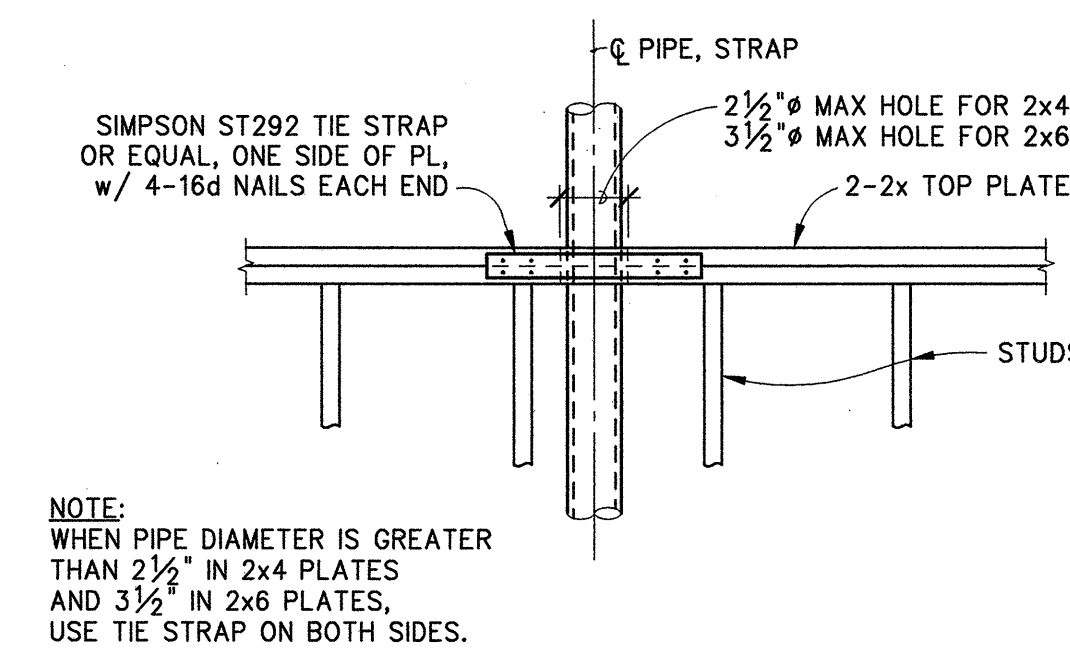
STUD WALL CORNERS

SCALE: NONE
KFF K8010 S1.4



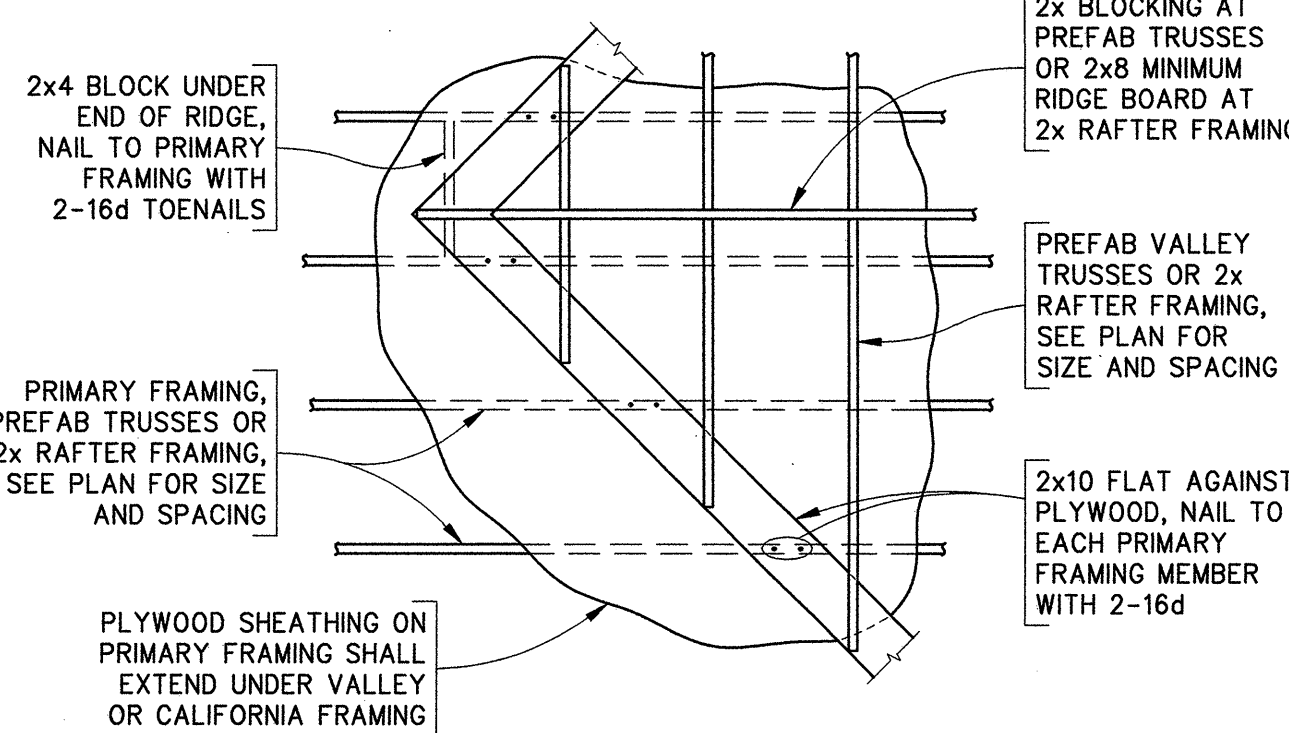
WALL TOP PLATE LAP

SCALE: NONE
KFF K8010 S1.4



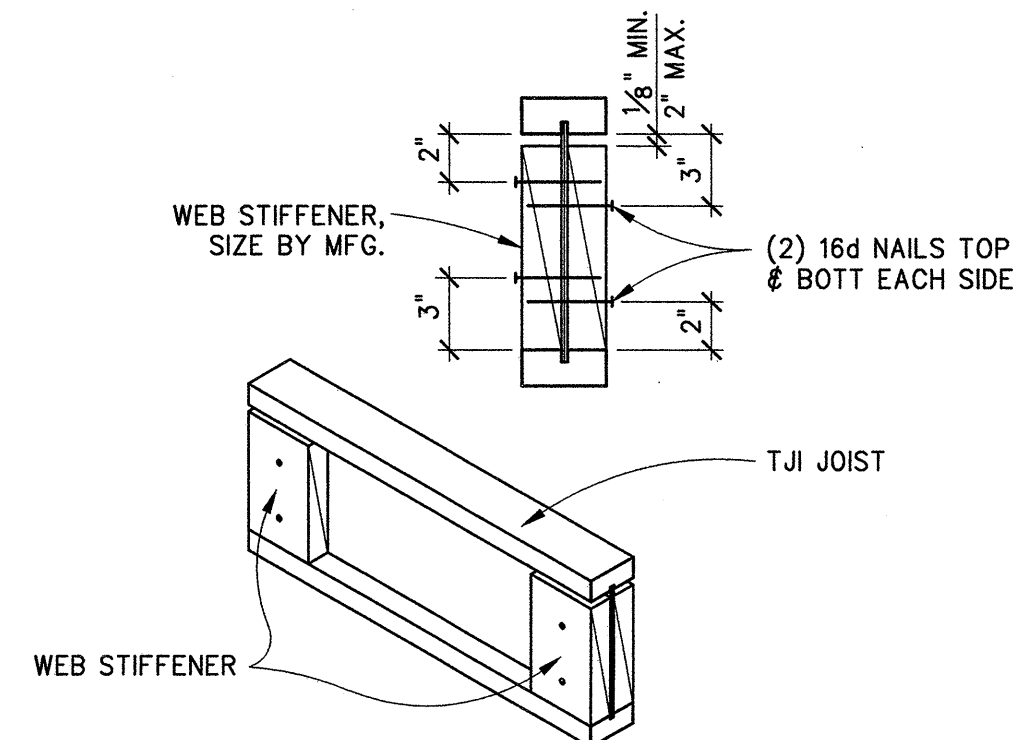
WALL TOP PLATE SPLICE

SCALE: NONE
KFF K8010 S1.4



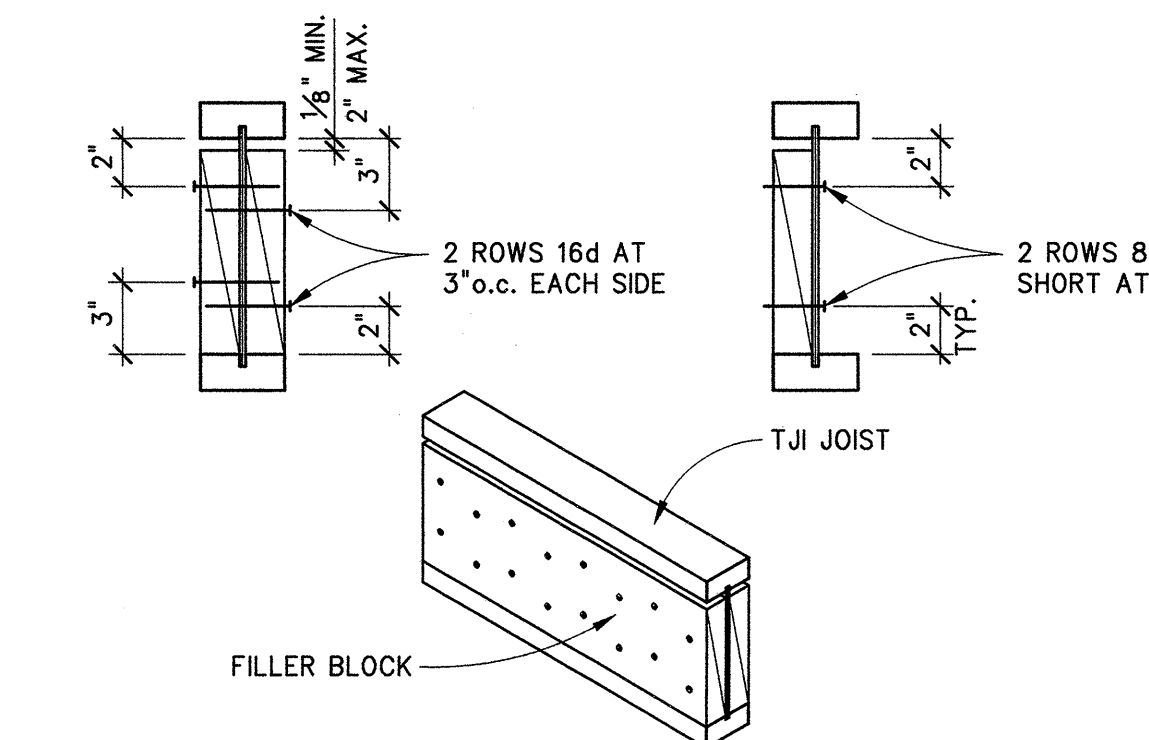
VALLEY OR CALIFORNIA FRAMING

SCALE: NONE
KFF K8010 S1.4



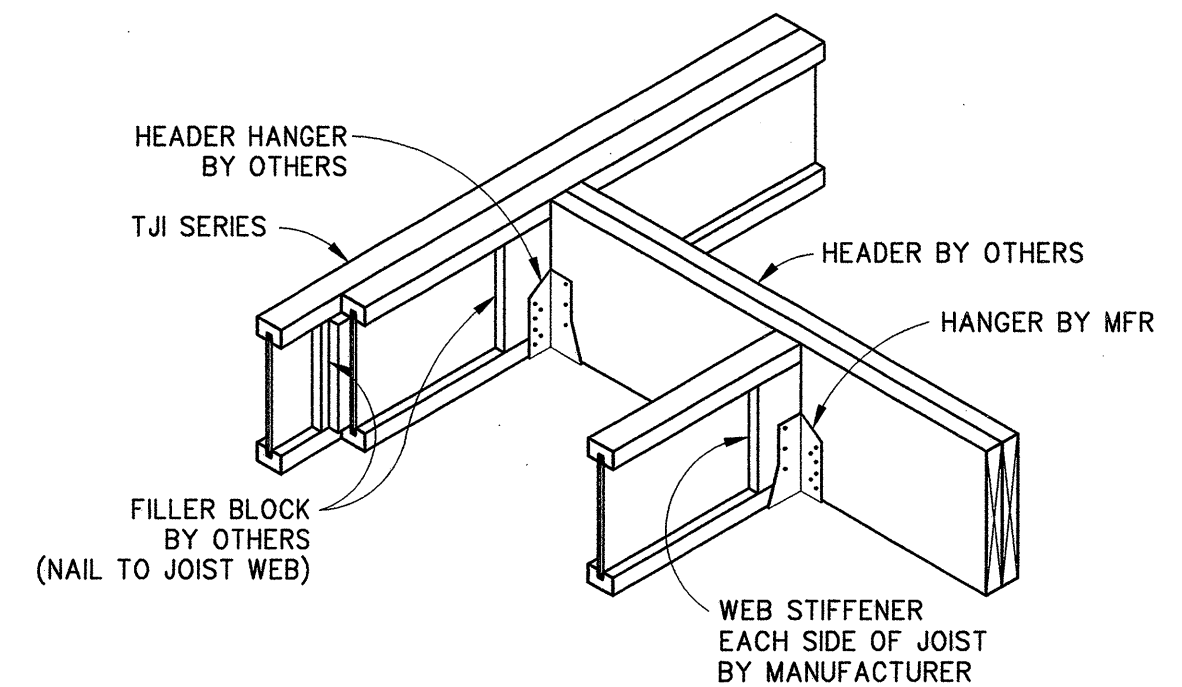
WEB STIFFENER NAILING

SCALE: NONE
KFF K8010 S1.4



FILLER BLOCK NAILING

SCALE: NONE
KFF K8010 S1.4



DETAIL

SCALE: 3/4\"/>

INSTRUCTIONS:
1. KNOWING JOIST DEPTH AND DESIRED HOLE SIZE, FIND 'FACTOR' ON TABLE 1.
2. USING 'FACTOR' AND SPAN, FIND MINIMUM DISTANCE ON TABLE 2. THE DISTANCE IS FROM ϕ OF SUPPORT TO ϕ OF HOLE.

NOTE: THE TOP AND BOTTOM FLANGES ARE NEVER TO BE CUT.

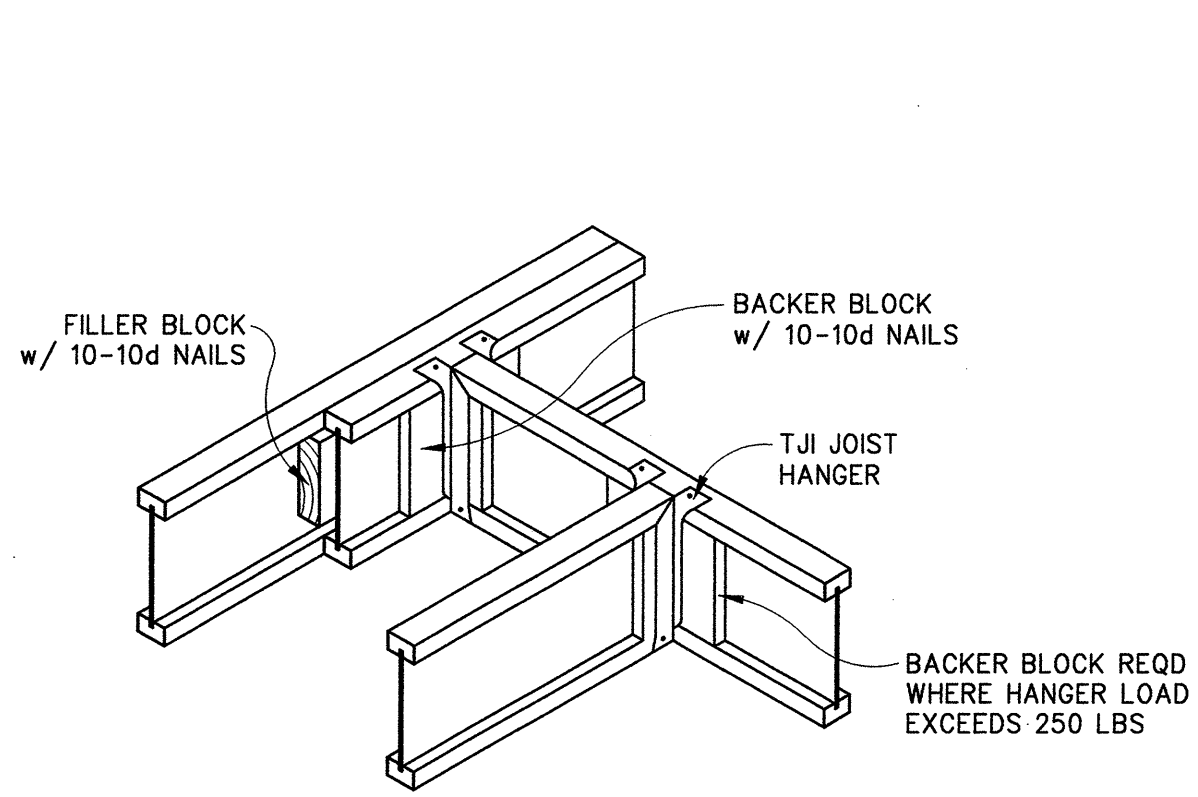
ROUND HOLE	2"	3"	4"	5"	6"	7"	8"	9"	10"	11"
10"	A	B	C	E						
12"	A	B	C	E						
14"	A	B	C	D	E					
16"	A	B	C	C	D	E				
18"	A	B	C	C	D	E				

* MINIMUM 1'-3" FROM ϕ OF SUPPORT
** MINIMUM 4" FROM ϕ OF SUPPORT

SPAN	A	B	C	D	E
14'-0"	1'-3"	2'-0"	2'-9"	3'-6"	4'-0"
15'-0"	1'-6"	2'-3"	3'-0"	3'-9"	4'-6"
16'-0"	1'-6"	2'-3"	3'-0"	4'-0"	4'-9"
17'-0"	1'-6"	2'-6"	3'-3"	4'-3"	5'-0"
18'-0"	1'-9"	2'-6"	3'-6"	4'-6"	5'-3"
19'-0"	1'-9"	2'-9"	3'-9"	4'-9"	5'-6"
20'-0"	2'-0"	3'-0"	4'-0"	5'-0"	6'-0"

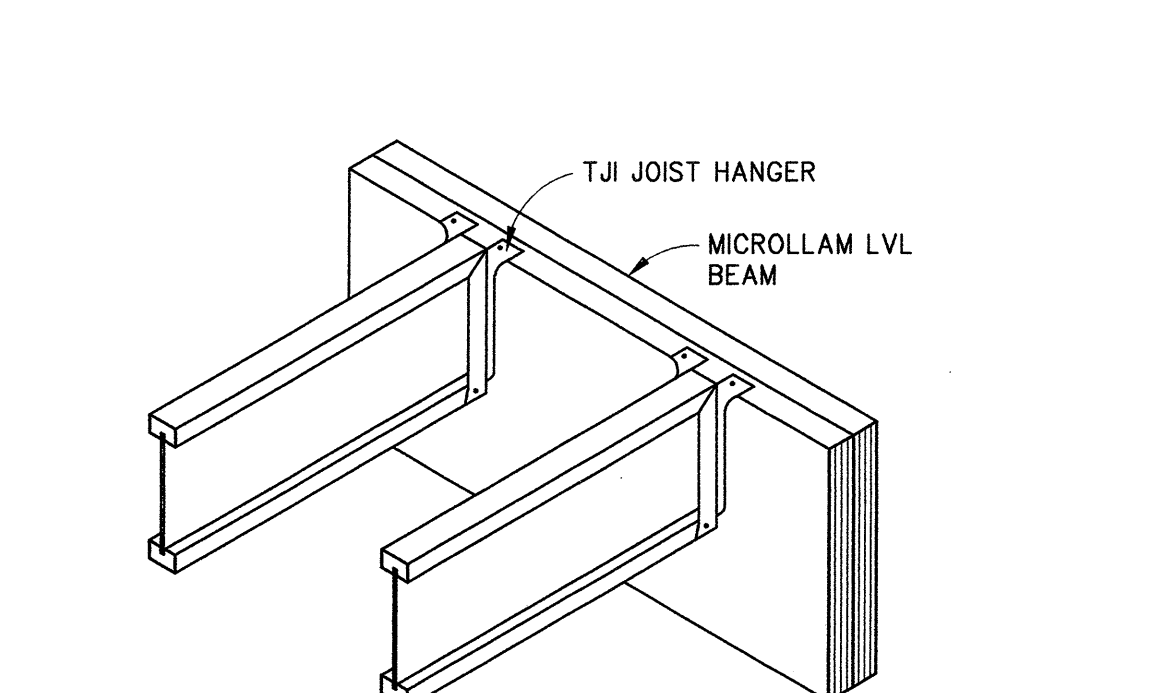
HOLE CHART FOR TJI WITH OSB WEB MATERIAL

SCALE: NONE
KFF K8400 S1.4



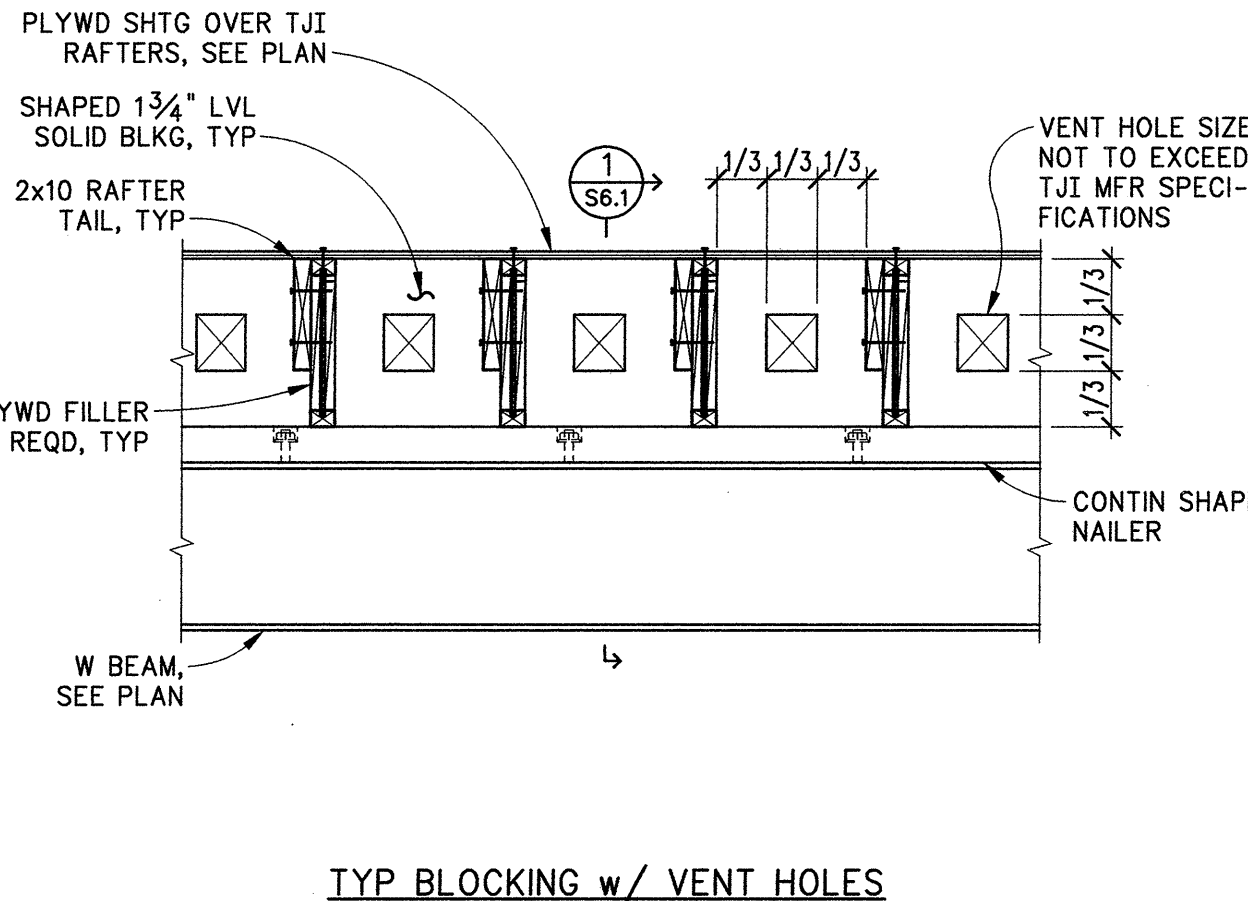
DETAIL

SCALE: NO SCALE
KFF K8971 S1.4



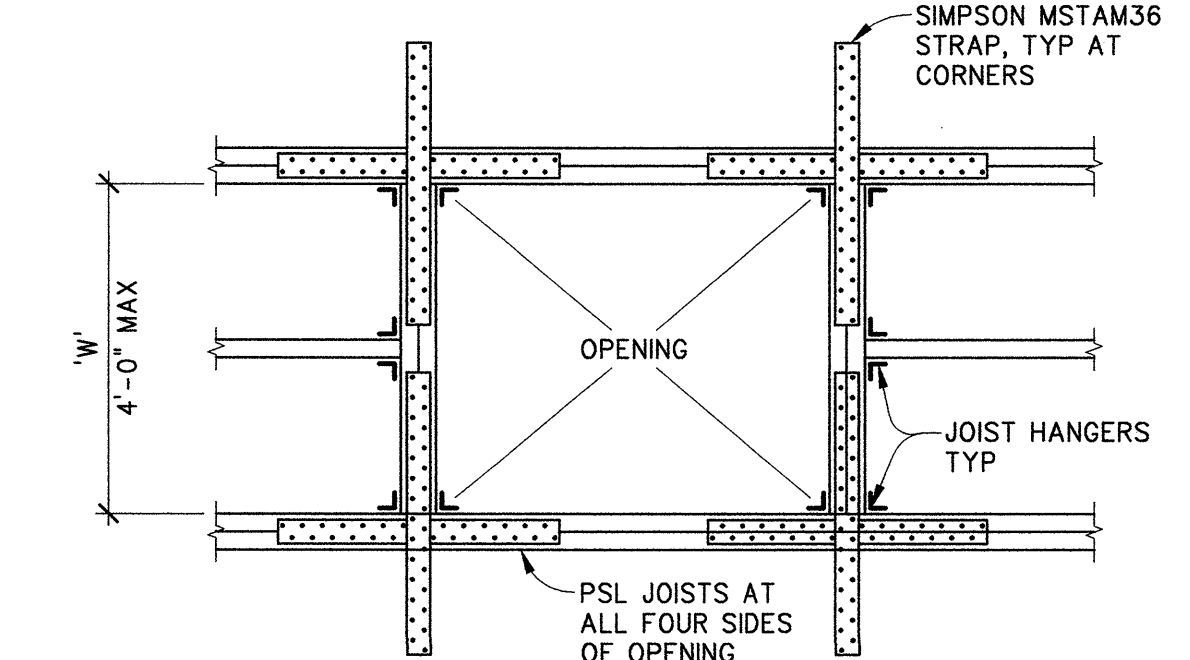
DETAIL

SCALE: NO SCALE
KFF K8972 S1.4



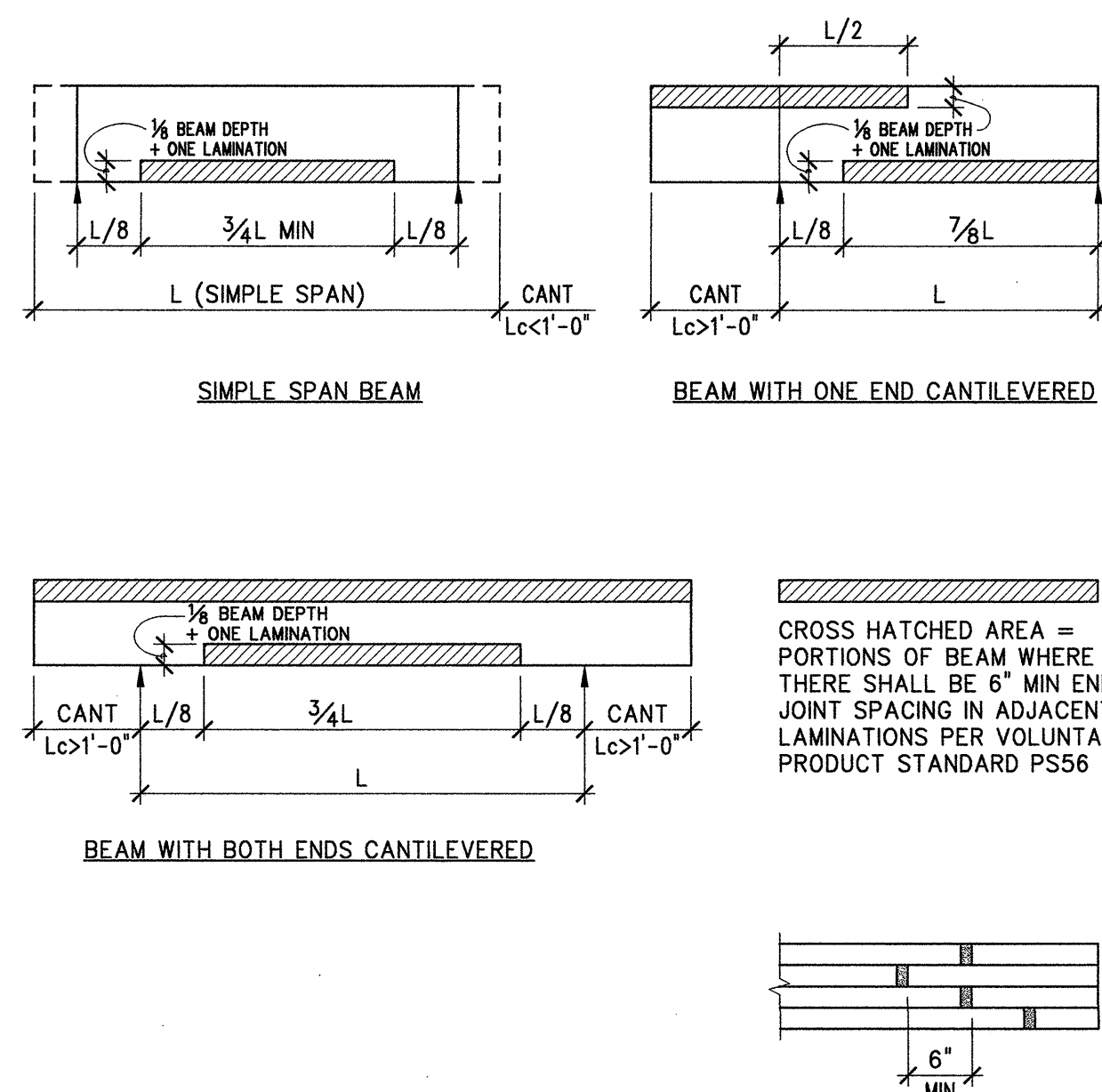
DETAIL

SCALE: 3/4\"/>



FRAMING AT SKYLIGHT OPENINGS

SCALE: NONE
KFF K8000 S1.4



SPACING OF END JOINTS IN LAMINATIONS OF GLUED LAMINATED BEAMS (ASTM D3737)

SCALE: NONE
KFF K8000 S1.4

DETAIL